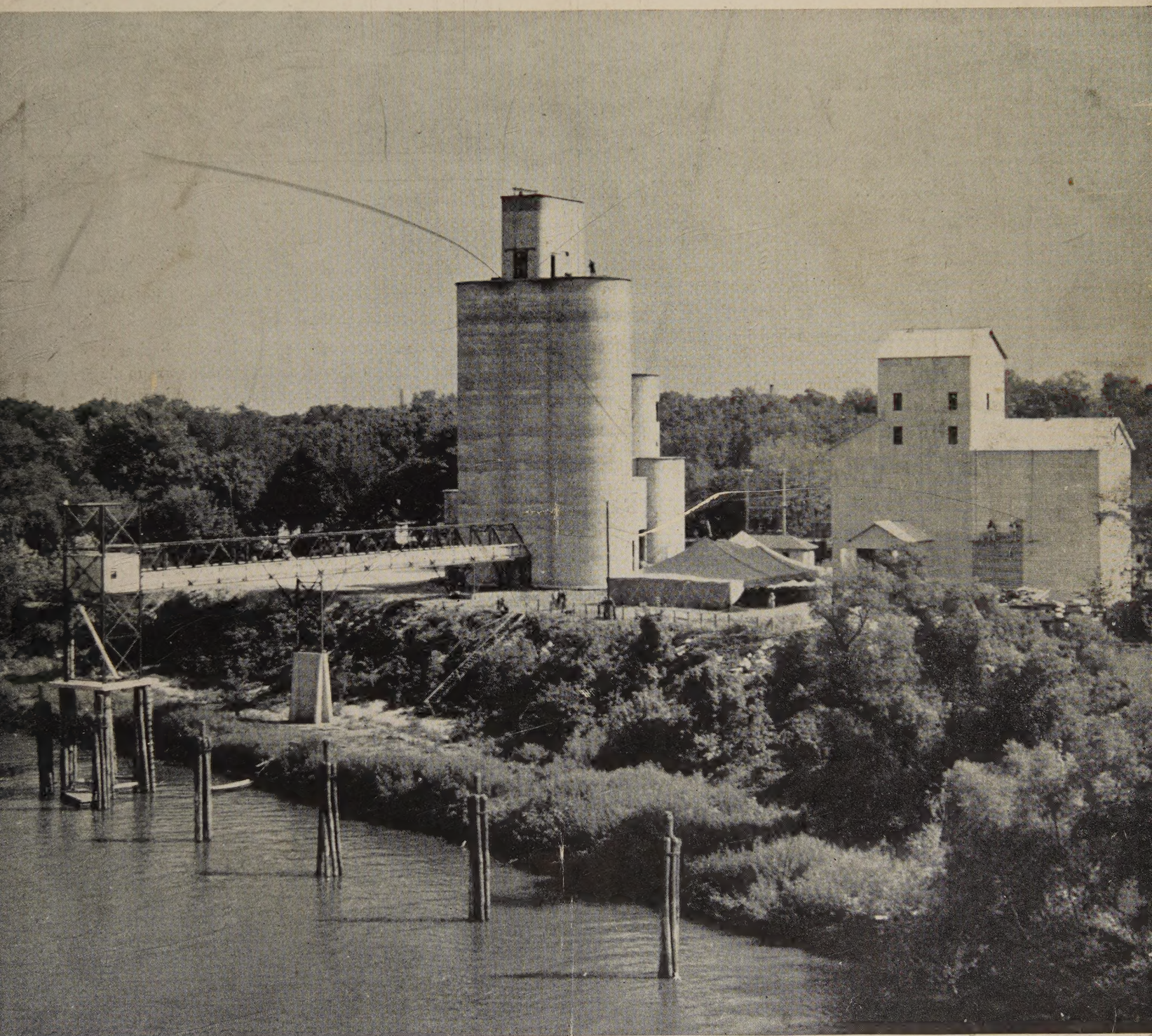


GRAIN & FEED JOURNAL

CONSOLIDATED
CHICAGO

Published Twice Monthly



December 24, 1947

HERE IS THE NEW

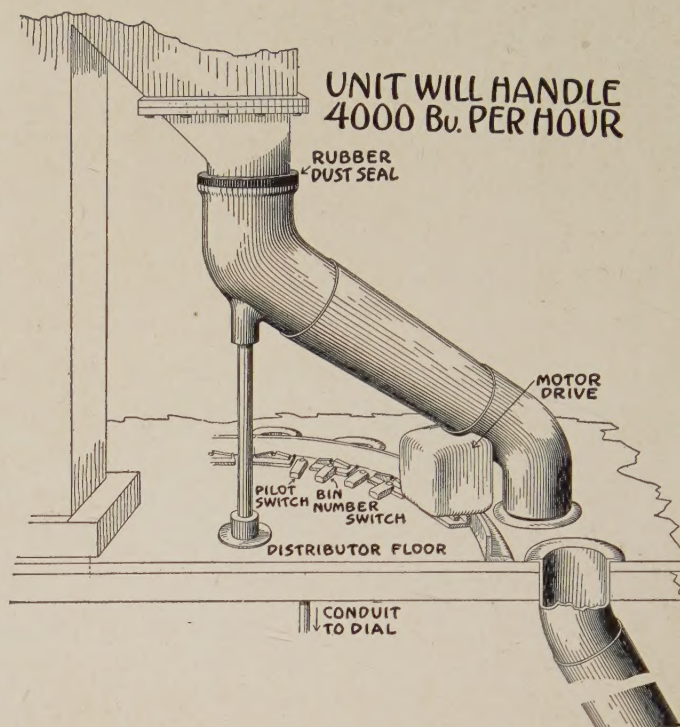
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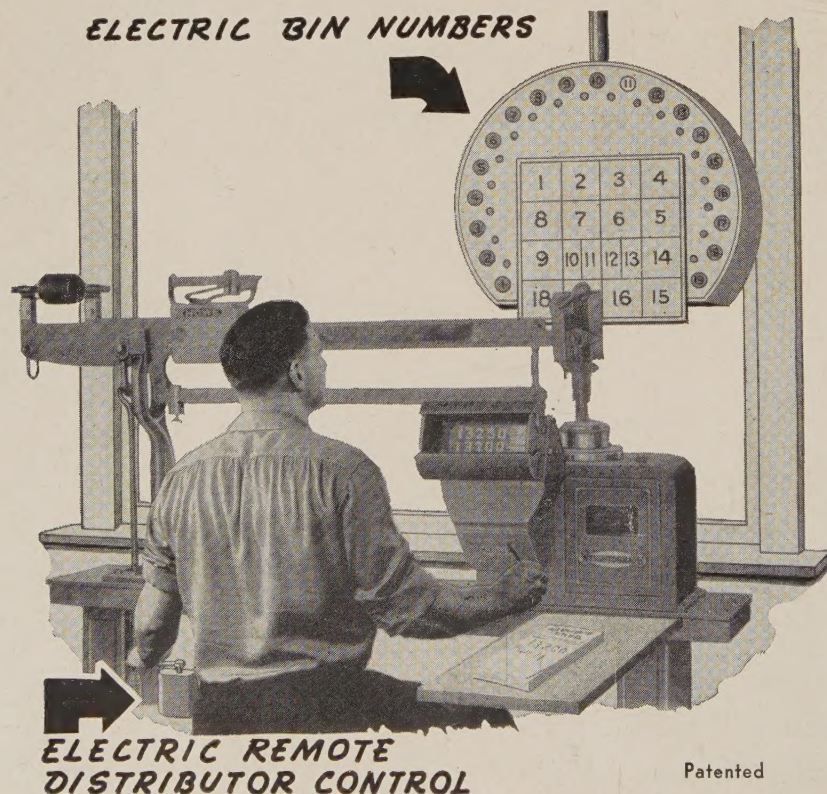
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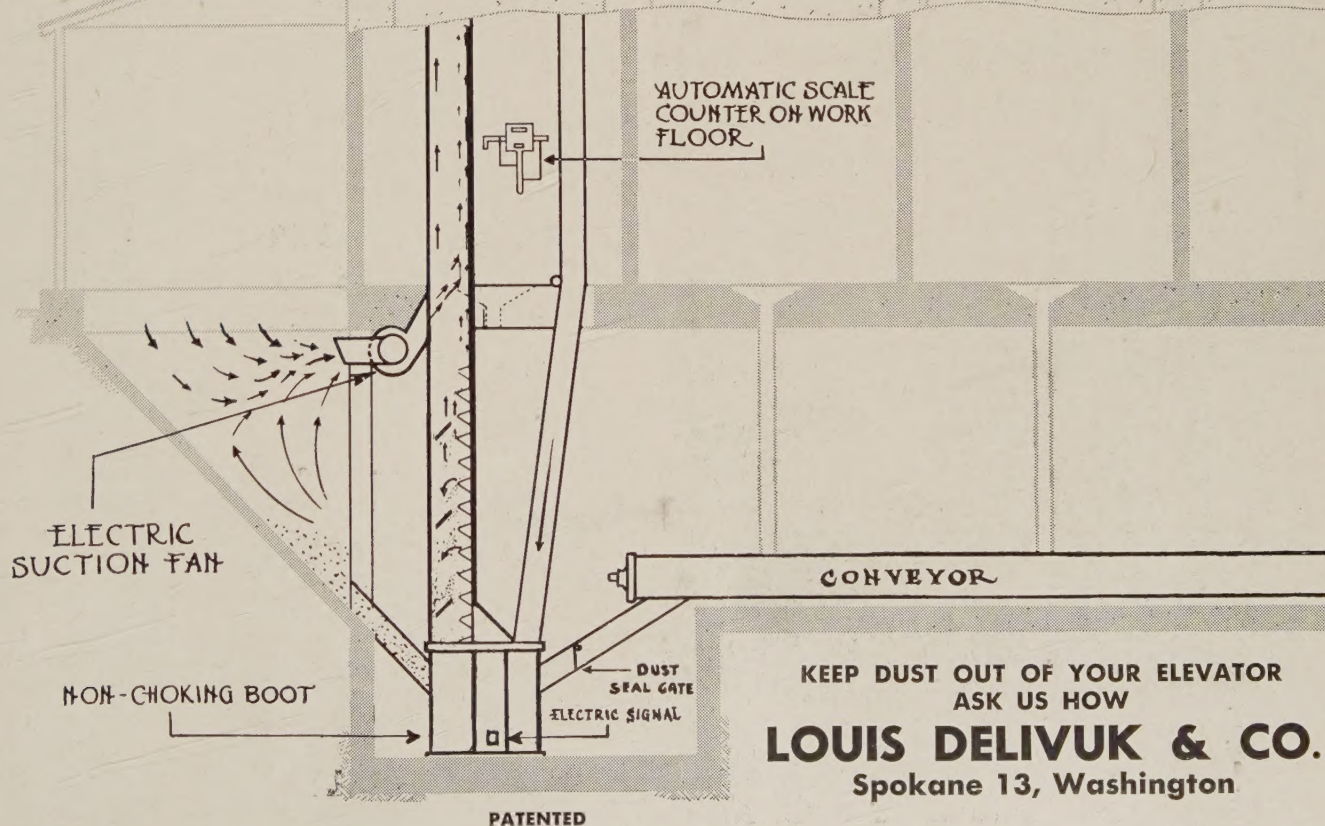
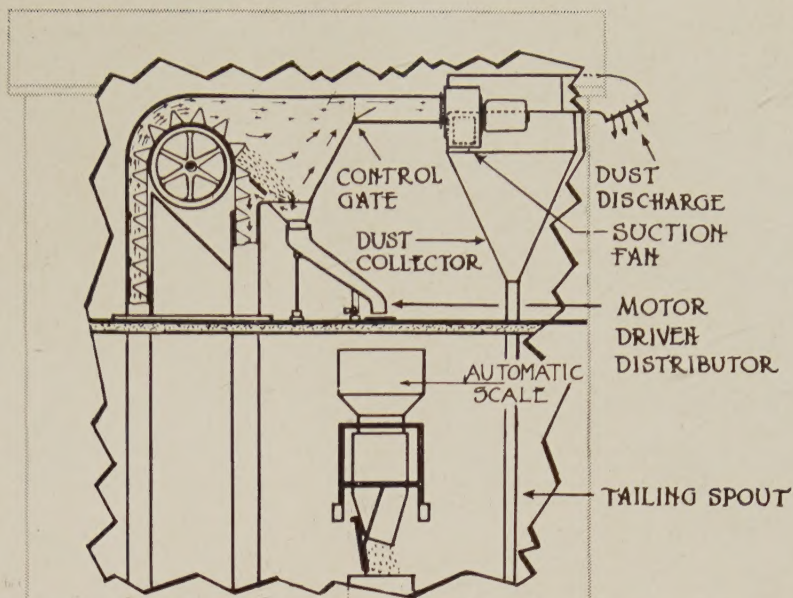
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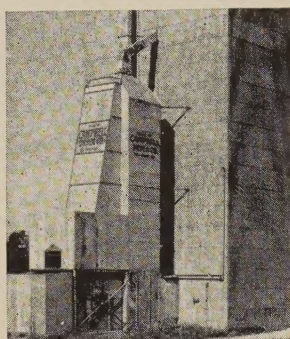


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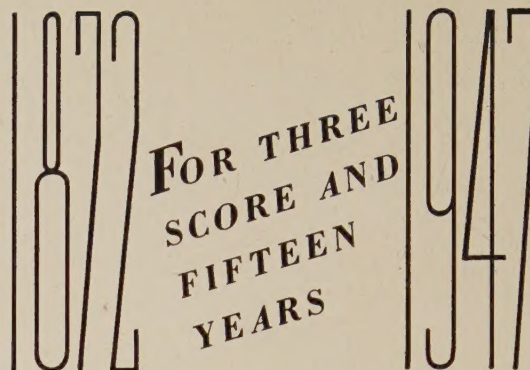
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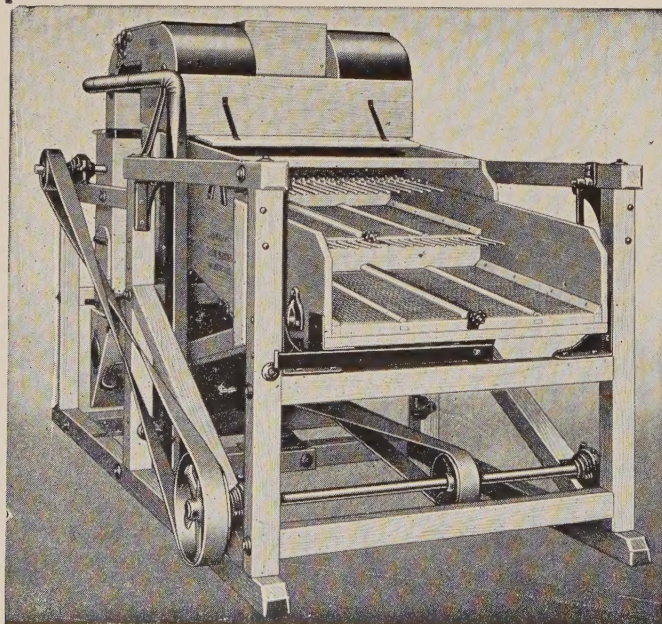
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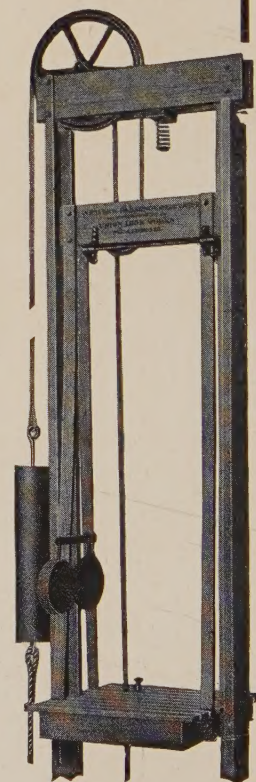
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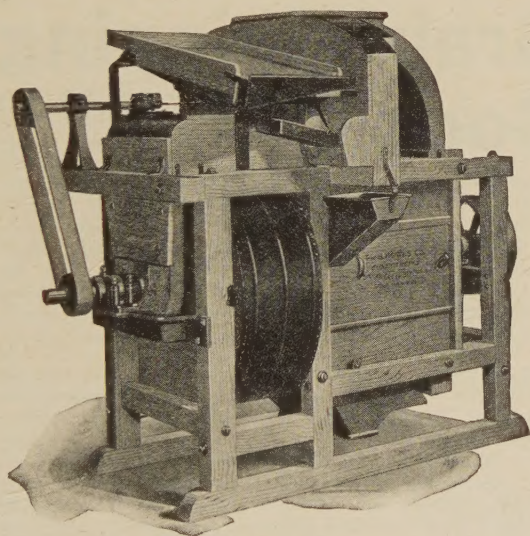
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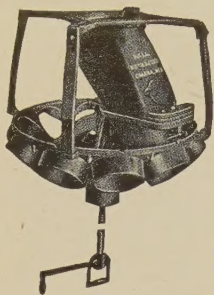
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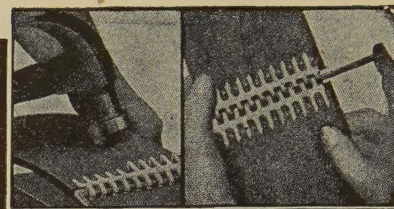
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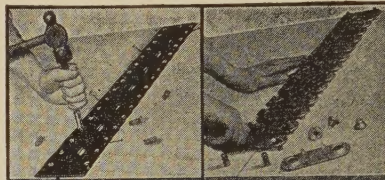
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Vol. 99, No. 12 Dec. 24, 1947

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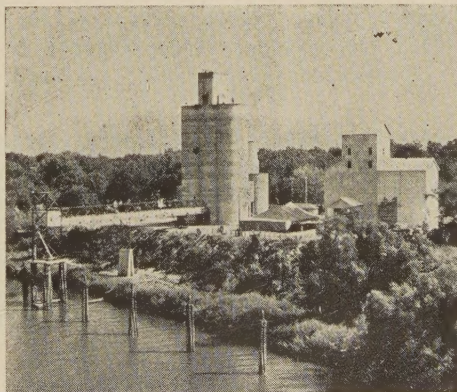
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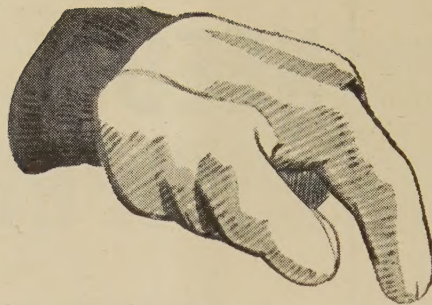


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Editorial

Regulating Trading in Commodities

The anti-inflation bill that passed the House by 281 to 73 and the Senate by 77 to 10 contains two provisions affecting the grain business, regulation of trading on exchanges and use of grain by distillers.

Under the new law regulation of trading on a commodity starts with a voluntary industry agreement, and such agreement is ineffective until approved by the President. Parties to the agreement would be immune to suits for violation of the anti-trust act.

When Congress reassembles in January action will be had by committees on the findings of the Economic Committee, which are mild, evidence that the strong presentations made by leading grain merchants testifying before the committee made it clear that adequate hedging markets are necessary and that "commodity speculation as a whole performs a useful economic service."

Following the recommendation by the Economic Committee that appropriate committees of Congress study speculation, Senator Barkley of Kentucky introduced a bill, S-1881, giving the Commodity Exchange Authority power to set margins on future transactions. It is reported amendments will be offered to this bill requiring a firm to make trades thru its own employees rather than thru a floor broker.

In arguing for control the administrator of the Commodity Exchange Authority sheds tears over the plight of the "thinly margined short quickly forced to cover by rising prices." Likewise his heart bleeds for "longs washed out," as he says, "by temporary reactions." To save these "poorly equipped" traders he would have the Authority given power to shove margins up and down at the Administrator's whim.

In attempting to save the poorly equipped trader from himself by requiring more margin so the incompetent will not accentuate price movements by covering at the top or selling out at the bottom, the Administrator is wasting his time, as the incompetent is certain to be parted from his money sooner or later. If the Administrator succeeded in his efforts to protect the incompetent from buying dear and selling cheap he would prevent the farmer from getting a fancy

price for his wheat or a miller from getting low priced wheat from a frozen-out bull.

Publication of Names of Speculators

Towards the end of the five weeks' special session of Congress events moved with an increasing crescendo of speed.

Congress passed a bill approved by the President the night of Dec. 19 authorizing the Secretary of Agriculture, who has charge of the Commodity Exchange Authority, to give the names of speculators to members of Congress and at his discretion, to the public.

It remains to be seen what use will be made of the list of some 13,000 individuals trading in grains by the special House investigating committee and the Senate appropriations committee, to which the names will be given. Perhaps nothing will come of it if the purpose is only to show, as charged by the President Oct. 16, that speculative trading in grains is responsible for the alleged high price of wheat. He then said he had directed the Department of Justice to investigate traders in the three future trading exchanges of Chicago, Minneapolis and Kansas City.

Two months have elapsed and the Attorney-General seems to have found nothing unlawful in the trading. One radio commentator has stated that he has inside information in September there were 71 speculative accounts in grain held by officials of the federal or state governments and that a United States

Senator was reported to be trading in grain and cotton.

Perhaps the Attorney-General is reluctant to proceed against high officials in the Government, who themselves or through dummies have used inside official buying information to guide them in making a profit out of purchases of commodities on the exchanges.

To an unbiased observer the future trading investigation is a smoke screen designed to divert the public attention from the real reasons for the present price of grain, which are two in number: first, the purchase and shipment out of the country of vast quantities of grain by our government; and, second, the depreciation of the United States dollar, commonly known as inflation.

We had three times the volume of speculation in wheat in 1929 when wheat was selling around a dollar a bushel than we have at present with wheat selling at over \$3 per bushel. If speculation forces up the price of wheat unduly why was the price of wheat at that time so low. Per contra, as speculation now is so much less, it cannot be the cause of present high prices.

It is possible the Supreme Court would hold publication of the business transactions of an individual violates the constitutional provisions against unreasonable searches and seizures.

Agriculture Secy. Encroaches on Revenue Department

The Secretary of Agriculture has given notice that he will amend the regulations of the Commodity Exchange Authority to prevent individuals from holding open long and short positions in the same future. It is claimed that 30,000,000 bus. of grain futures were thus held open to evade or postpone payment of the tax on income accruing if the trades were closed out.

Perhaps the Secretary is not aware of the fact that every option expires in a few months and, wilfully, must be closed out, the profit, if any, becoming a matter of record and taxable.

At any rate this alleged evasion or postponement of income tax is a matter not for the grain exchange or the Department of Agriculture, but for the Internal Revenue Department, which office certainly has made a record for efficiency in ferreting out taxes due, even from the most elusive gangsters.

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Washington News

Bill to Curb Inflation Defeated

The vote of 202 to 188 lacked the necessary two-thirds majority to make effective the voluntary agreements plan to prevent inflation.

Foreign Aid Bill Calls for Carry-over

Under the foreign aid bill, the President is required to retain at least 150 million bus. of wheat, flour and other wheat products in this country as a "carry-over" from the 1947 crop for domestic use, unless he determines on or after next March 1 that a stockpile of this size is unnecessary.

Would Publish Names of Grain Speculators

Harold Stassen asked the President to make public the list of government officials who have been speculating in the commodity markets. In response to request by a committee of Congress for the names of big traders the Commodity Exchange Authority has prepared a list and promises to give it out if authorized by act of Congress.

Feed Advisory Committee Recommends Research

Recommendations for research on the marketing, utilization, and production of feeds for 1948-49 under the Research and Marketing Act have been made by the Feed Advisory Committee.

The Committee asked for continuation of a current study of the adequacy of storage for grains and feeds; for an investigation of the loss of nutritive values in stored corn, and for a simple test of fat acidity that can be used in regular grain inspection work to indicate the soundness of grain for feeding and processing.

The Committee recommended a study of the nutritional value of amino acids when added to commercial mixed feeds; a continuation of current research on the prevention of insect damage to stored grains, cereal products and seed stocks; a study of the stabilization response of carotene in stored alfalfa products, with special attention to the use of anti-oxidants, and more information on commercial mixed feeds as to total production, ingredients and distribution.

Other recommendations cover the entire field of nutrition and merchandising. Members of the committee are: Elwood L. Chase, Cooperative G. L. F. Mills, Inc., Buffalo, N. Y., Chairman; R. C. Woodworth, assistant to the president, Cargill, Inc., Minneapolis, vice-chairman; L. E. Bopst, secy.-treas., Association of American Feed Control Officials, College Park, Md.; R. C. Buckles, Moundview Wheat Farm, Stratford, Tex.; E. G. Cherbonnier, feed industry consultant, St. Louis, Mo.; H. Clarence Eales, assistant general manager, Poultry Producers of Central California, San Francisco; Fred J. Ludwig, grower, and director

of the Farmers Trading Co., Laurens, Ia.; Floyd E. Mundell, grower, Cozad, Neb.; Harold L. Peet, dairyman, Pike, N. Y.; Charles Schmitt, grower, Beason, Ill.; and Martin L. Salm, grower, Chilton, Wis., who was not at the meeting.

Eileen Runner, Acting Secretary of Colorado Ass'n

Following the resignation of Lloyd N. Case, Miss Eileen Runner has been named secretary of the Colorado Grain, Milling & Feed Dealers Ass'n, at Fort Collins. Miss Runner is familiar with the work, having been employed in the office for some time.

Dust Explosion in Winnipeg Mill

A dust explosion during the night of Dec. 3 at the Ogilvie Flour Mills Co., Ltd.'s plant, Winnipeg, Man., caused damage estimated at about \$20,000, and sent one wall of a dust room of frame construction crashing on the roof of an adjoining building. No one was injured. There was no fire.

The damage was confined to the blown-out wall and to water damage that resulted when the sprinkler system went into action thruout the mill.

It is believed the explosion had its origin in a spark in one of the roll stands and was carried to the dust room thru the suction system. An old-type stocking collector was wrecked and is being replaced by a cyclone-type collector.

New Uses for Grain Sorghums

Manhattan, Kan.—A new industry for Kansas based on the use of sorghum grains, may develop from experiments being conducted at Kansas State College, according to W. H. Honstead, acting head of the chemical engineering department.

Milling sorghum grains for the removal and purification of starch is being done by a modified wet milling process at the College.

A pound of Carnuba wax can be recovered from 400 pounds of sorghum, using the modified wet milling process developed at Kansas State College. The wax is used in carbon paper, polishing waxes and in certain molded products. It sells for \$2 per pound.

Uses of starch which can be extracted from Kansas sorghums include baked goods, sirups, dextrose, paper, explosives, paints, insecticides, soap, pharmaceuticals, fuel briquettes, battery compounds, textiles, adhesive and rubber goods.

Prof. Honstead expects the new industry to develop in medium-sized Kansas cities producing the valuable wax, an edible oil, a high-protein livestock feed and starch; all from sorghums grown in Kansas. The Kansas Industrial Development Commission financed the research.

Futures Market's Relationship to Handling and Processing

By RICHARD UHLMANN, pres. Uhlmann Grain Co., Chicago, before Society of Grain Elevator Superintendents.

The futures markets in this country with their hedging facilities have performed a wonderful service to the public during the past century.

AN IDEAL MARKET SITUATION would exist if exactly 1/52nd part of the world's crops were harvested each week, and if exactly 1/52nd part were marketed each week and consumed each week, and if the quality and quantity were always the same, the quantity merely increasing slowly, and gradually keeping pace with the increasing population. Likewise, it would simplify everything if the price remained the same, and if every buyer of grain, or flour, or flax paid cash for the articles which he bought. Then, of course, there would be no credit problem, no storage problem, no grading problem, and most significant of all, no price problem. But since we do not live in an Utopia, and conditions are not so ideal, let us turn for a moment to examine realities.

PRODUCTION AND CONSUMPTION NOT CO-ORDINATED. The first impressive fact is that there is a complete lack of co-ordination between production and consumption. This is particularly true of wheat, which is raised in virtually every clime, even in a place like Siberia, with its unrelenting cold. The farmer looks carefully at the price before he decides how much he will plant. If it is more profitable to put his land into corn, or into soybeans, or into flax he naturally is quick to shift.

This makes the supply side of the market very uncertain, and thus we have market fluctuations. If it were not for the facilities of the hedging market most of the elevator concerns and merchandisers could not deal in large quantities because the risks would be so great that many of them would be driven out of business when they guessed the market incorrectly.

PRICE IS THE MEDIUM—The fundamental problem, therefore, of any market is to move the whole crop into consumption without a loss, without a shortage, and without an excessive carryover. Peculiarly enough, the price is the instrument through which markets accomplish this. If a market is free, open and competitive it makes the automatic adjustment of production to consumption.

Take, for example, a house which has the capacity to store two million bu.; every time the market fluctuates 1c per bu., either up or down, it means that the net value of that grain changes to the extent of \$20,000. Thus, if it were not for the futures market it would be extremely difficult to operate without taking some terrific risks. It is not an uncommon occurrence for the market to break as much as 10c per bu. in a single day. When that happens it means that the value of the grain stored in your elevator would decline \$200,000 in value.

Futures provide a means whereby those who handle grain may sell the risks of market fluctuations to others who have the capital and temperament to assume them. In other words, a futures market is just as essential as fire insurance to a merchant, and certainly is as important as Lloyd's of London is to the shipping trade.

GRAIN HANDLED AT LOWEST COST—The public sometimes overlooks the low cost

of the Chicago market compared with the service it renders. The mechanism runs so smoothly that much is taken for granted, but in each day's trading session hundreds of problems are solved, and with practically no confusion hedgers, speculators and millers all meet for a common purpose.

I often think what a pity it is that our legislators are not more familiar with the functions of the central market system. I feel that if they were, they would be more sympathetic with our problems, and could co-operate better toward a proper understanding of the farmer's requirements. Few persons realize the low handling cost of getting the grain from the producer to the consumer; it is lower than the cost of moving any other standard food product. This low cost is directly related to the method of handling grain on any organized Exchange, and particularly to the process of hedging on a broad and open market.

THE DAYS OF O.P.A.—We need only go back to the days of O.P.A. to see how insecure the grain trade was in its dealings. A year ago at this time practically all of the grain futures were at the ceiling levels, and hedging operations were almost impossible. This meant that the actual business could only be done on a hand-to-mouth basis. Furthermore, we had a period when we reverted to the barter system, and farmers would only sell their grain if they were promised something in return which was likewise scarce. In some cases they traded corn for nylon stockings, or for birch fence posts, or for bed linen. Others resorted to black markets; we heard of incidents where candy manufacturers had to slip \$100 or \$200 under the desk of some country elevator in order to purchase grain. Thus, tremendous black markets grew up.

The government in order to get its wheat supplies to take care of foreign claimants finally admitted that price control was ineffective. The CCC paid a bonus of 30c per bu. to farmers to get wheat out of hiding. This was tacit admission that price was the controlling factor, even at a time when restrictions were in full force. Even now in Canada, with the price of wheat comparatively cheap, the farmer is holding his grain off the market, and we find there is about 200 million bu. of wheat left on farms and in country elevators, which is extremely unfortunate, because people in Europe are

starving, and it is necessary to get the grain into commercial channels.

FREE MARKET GETS BEST RESULTS—Ours is practically the only country where free trading is still recognized. As a result, we are going to furnish about half the wheat which the surplus nations are clearing for export. This is, indeed, evidence that free market practices accomplish the best results.

Now I should like to say just one more word about the Chicago Board of Trade, of which I am at the present time a vice-president. As a self-governing institution, the Board's method of law-making is very democratic. The initiative and referendum came into vogue there long before it became popular with our state governments. All rules are adopted by the members.

The rules governing futures trading after these many years of continuous growth have been amended from time to time, but have been stabilized to meet the needs of the various parties immediately concerned in grain marketings, namely, hedgers, speculators, cash grain interests, warehouse interests, bakers, as well as importers and credit interests. It would be more than a calamity if, through government operations, anything should happen to endanger any institution that has served so many millions of people so successfully.

The grain trade credit has been mobilized and safeguarded to a very high degree of business efficiency. For this reason the banks have always loaned almost the full amount of the value of the warehouse receipts. To those who have devoted their life's efforts to the marketing of farmers' products, the problems of recent years have been increasingly difficult. However, I still have great confidence in the future. Possibly this will be encouraging to you men who share an equal responsibility in the handling of this vast business.

Despite the many regulations that we still have, I feel certain that our government will not forever continue in business, competing with its citizens. It is certainly a wonderful record to be able to boast that in any hour of a business day, in war or in peace, in prosperity

Mutual Feed Dealers to Meet

The midwinter meeting of the Mutual Millers and Feed Dealers Ass'n will be held Feb. 11 at the Hotel Buffalo, Buffalo, N. Y.

or in panic, grain could be sold on the Chicago Board of Trade at a market value which was known to all.

Well Equipped Iowa Country Elevator

The plant at Wellsburg, Ia., shown in the engraving herewith, is operated by the Potgeter Grain Co., which is owned by John and George Potgeter. The brothers' father, Henry Potgeter, built the first elevator at Steamboat Rock, Ia., in 1889. In addition to the Wellsburg and Steamboat Rock plants the firm has elevators at Eagle Grove and Ellsworth.

The main plant at Wellsburg is a 25,000-bu. cribbed construction unit, equipped with high speed cups and a Strong-Scott head drive, a Bender over-head hoist and a Richardson automatic scale with an electric tally on the working floor. In addition to this elevator there is an annex with a capacity of 75,000 bus. This unit is a 2x6 cribbed constructed plant with a slab foundation. Screw conveyors 100 feet long are installed in the top and the bottom, each driven with a 5-h.p. direct connected motor.

The feed mixing room is equipped with a 50-h.p. Jay Bee hammer mill and two Blue Streak mixers. There is crib room for 25,000 bus. of ear corn, with an electrically operated elevator to fill. Recently a Campbell grain driver was installed at the extreme end of the annex with a double steel leg, one of which elevates the wet corn to the drier and the other which elevates the dried corn back into the elevator.

There are three trucks in operation, each equipped with hydraulic hoists and a short portable elevator mounted on a trailer to load the trucks at the farms. A Fairfield electrically operated coal conveyor is used for unloading cars of coal.

In the new office just completed a new Fairbanks type-registering beam 50-ton scale has been installed.



Feed Mixing Room, Office, 25,000-bu. Elevator, 75,000-bu. Annex and 25,000-bu. Ear Corn Storage at Wellsburg, Ia.

Asked — Answered

[Readers desiring trade information should send query for free publication here. The experience of brother dealers is most helpful. Replies to queries are solicited.]

Figuring Freight on Bagged Feed?

Grain & Feed Journals: What are the number of bags to a carload of feed so I can figure the freight rate?—Arthur V. Ley, La Plata, Md.

Ans.: The minimum weight on a carload of feed is 60,000 pounds; and the feed is usually packed in 100-lb. bags, depending on the contract. Bags sometimes are inaccurately filled and not even weight.

Smoke from Office Stove?

Grain & Feed Journals: Our office is on the north of the elevator. Every time the wind is in the north we have trouble with smoke from our office stove. We put steel pipe on the chimney which extends about to the top of the elevator but the cupola is about ten feet higher. This does not stop the smoke trouble. Is there any way of getting rid of this trouble? A feed salesman told me there was a forced draft attachment that could be used, but I have never been able to find out where I could get one. Would you know?—S. L. Tussing, Prior Lake Elevator Co., Prior Lake, Minn.

Answer: Might try a revolving cowl on top of the chimney pipe, arranged with a tail fan to keep it open away from the wind. Also might counteract the pressure of air down the pipe by having a ventilator in the window or wall to the north, so that incoming fresh air would blow the smoke back into the stove thru the door. This would work well unless the office door was open to let the air pressure out of the room.

Proof of Weight Loaded?

Grain & Feed Journals: On a car of beans that we shipped to Chicago in November, 1946, the car inspector made a notation that car was leaking and that approximately 25 bus. was under the car, that had shifted floor boards.

Our claim for shortage was rejected by the railroad.

To arrive at the amount of the shortage I itemized every bean we had taken in, and also showed every sale made that fall, the difference being 275 bus. and 30 lbs. short of balancing. I filed claim for that weight at \$3.01, or \$829.25, for shortage on this car. I had loaded the car on estimated weights.

Is there any way to adjust this claim that would be fair to both?—Illinois shipper.

Ans.: Unfortunately for the shipper the courts do not accept weights arrived at by roundabout figuring. The method followed does not provide a reliable weight of the lading into the car.

If the car was weighed on a track scale in transit recovery could be had of the difference between the track scale weight and the destination weight.

The fact that terminal market weights are rejected by the courts on a claim when there is proof of the amount loaded into the

car over good scales that are tested periodically should persuade the shipper to equip himself with proper weighing facilities.

Prefabricated Garage?

Grain & Feed Journals: We are in need of a building for housing truck and other equipment. Will greatly appreciate your furnishing us names of manufacturers producing such buildings prefabricated.—George H. Walters, Maquon Farmers Elevator Co., Maquon, Ill.

Answer: In reply we send names of manufacturers of these prefabricated buildings.

Irresponsible Broadcasts

Grain & Feed Journals: Along with my breakfast this morning I read an Associated Press article, a report of a recent speech by Sec'y Anderson about grain speculators being tax-dodgers as well as speculators.

Seems like there ought to be some way of putting an end to those kind of broadcasts. In my opinion there might be an occasional fellow that could get away with such a thing, but I do not think the grain trade is much if any different than any other trade, and I resent the grain business being singled out and used as a political football. I do not think there is any question but what there is a remedy, and along about November, 1948, we will apply it.—George W. Young, Owosso, Mich.

Mexico to Build Elevators

Five reinforced concrete elevators, aggregating more than 10,000,000 bus. storage capacity and costing \$6,000,000, will be built by the semi-official Mexican government agency in control of grain marketing, the Nacional Distribuidora y Reguladora, S. A. de C. V., according to an announcement on Dec. 1 by Carlos M. Cinta, general manager of the agency. Construction on the elevators is expected to start shortly after the first of the year with one each at Mexico City, Torreon, Irapuato, and two houses at Obregon. The units will include complete equipment for drying and cleaning operations and will be adaptable to handle not only wheat, but corn, rice and beans. The Mexico City house will have a car and truck dump, while the other units will have only truck dumps. According to Mr. Cinta, it is planned to construct more elevators, especially a number of smaller country units.

The ABC of ADM

The Archer-Daniels-Midlands Co. has issued a brochure entitled "The ABC of ADM" which shows the plant properties of the firm, the work that keeps the properties busy, and the relationship of each department to the others. It is a "let's get acquainted" picture of a vast enterprise that serves industry and develops markets for the harvests of the farms.

Coming Conventions

Trade conventions are always worth while as they afford live, progressive grain dealers a chance to meet other merchants from the same line of business under favorable conditions. You can not afford to pass up these opportunities to cultivate friendly relations and profit by the experience and study of others.

Jan. 7, 8. Mississippi Seedsmen's Ass'n, Hotel Heidelberg, Jackson, Miss.

Jan. 9, 10. Kansas Seed Dealers Ass'n at the Hotel Broadview, Wichita, Kan.

Jan. 15, 16. American Dehydrators Ass'n, Congress Hotel, Chicago, Ill.

Jan. 19, 20. Indiana Grain and Feed Dealers Ass'n, Claypool Hotel, Indianapolis, Ind.

Jan. 24, 25, 26. American Seed Trade Ass'n, La Salle Hotel, Chicago, Ill.

Jan. 26, 27. Northwest Retail Feed Ass'n at Hotel Nicollet, Minneapolis, Minn.

Jan. 26, 28. Farmers Grain Dealers Ass'n of Iowa, Des Moines, Ia.

Jan. 27, 28, 29. Farmers Grain Dealers of North Dakota, Bismarck, N. D.

Feb. 1, 3. The Institute of American Poultry Industries, Municipal auditorium, Kansas City, Mo.

Feb. 3, 4. Illinois Farmers Grain Dealers Ass'n, Pere Marquette Hotel, Peoria, Ill.

Feb. 11. Mutual Millers and Feed Dealers Ass'n, Hotel Buffalo, Buffalo, N. Y.

Feb. 16, 17. Colorado Grain, Milling & Feed Dealers Ass'n, Denver, Colo.

Feb. 19, 20. Midwest Feed Manufacturers Ass'n, Kansas City, Mo.

Mar. 1, 2, 3. Farmers Elevator Ass'n of Minnesota, Nicollet Hotel, Minneapolis, Minn.

Mar. 5, 6. California Seed Ass'n. Hotel Sir Francis Drake, San Francisco, Cal.

May 5, 6, 7. American Feed Manufacturers Ass'n at the Netherland Plaza Hotel, Cincinnati, O.

May 7, 8. Oklahoma Grain and Feed Dealers Ass'n, Enid, Okla.

May 13, 14, 15. Texas Grain and Feed Dealers Ass'n, Ft. Worth, Tex.

May 13, 14, 15. Society of Grain Elevator Superintendents, Hotel Claypool, Indianapolis, Ind.

May 17, 18. Panhandle Grain and Feed Dealers Ass'n, Amarillo, Tex.

May 17, 18, 19, 20, 21. Ass'n of Operative Millers, Hotel Morrison, Chicago, Ill.

May 18. International Institute of Milling Technology, Hotel Morrison, Chicago, Illinois.

May 21, 22. Kansas Grain, Feed and Seed Dealers Ass'n, Hotel Kansas, Topeka, Kan.

June 7, 8, 9. Central Retail Feed Ass'n, Hotel Schroeder, Milwaukee, Wis.

June 14, 15. Eastern Federation of Feed Merchants, at the Hotel Commodore, New York.

June 17, 18, 19. Southern Seedsmen's Ass'n at the hotels Baker and Adolphus at Dallas, Texas.

June 20, 21, 22. Indiana Grain & Feed Dealers Ass'n, French Lick Springs Hotel, French Lick, Ind.

July 25, 26, 27. The National Hay Ass'n, Inc., Hotel Statler, St. Louis, Mo.

Sept. 9, 10. New England Feedmens Conference at University of Maine, Orono, Me.

Sept. 20, 21, 22. Grain and Feed Dealers National Ass'n, Hotel Fort Des Moines, Des Moines, Ia.

River Elevator at Havana, Ill.

Pictured on Front Cover

A development of recent years has been the provision of barge loading facilities along the Illinois River by leading Chicago grain firms.

A good example of the necessary equipment is the plant of the Havana River Grain Company, Co-operative, at Havana, Illinois.

The Barge Elevator

The barge elevator has a capacity of 70,000 bushels. It consists of two large tanks, 25'x90', one small tank in between and a 3,000 bushel shipping bin. The cupola rises 24' from the top of the 90' bins. The elevator driveway is on the east side of the elevator, contains a 40' Kewanee air dump which discharges into a 700-bu. dump pit. Two 4,500 bus. per hour legs are driven by Fairbanks-Morse 15-hp. motors with Falk Speed Reducers.

Grain may be elevated direct to the bins with either leg or to the two Richardson 10-bu. automatic scales to be loaded out by barge. From the shipping bin, grain is conveyed 170' on a 24" belt to the barge loading tower. Here, the belt discharges into a small hopper and is distributed in the barge through a loading spout which can be moved over a radius of about thirty feet. The spout is handled by a small winch on the concrete platform at the base of the tower.

Ear Corn Elevator

The ear corn elevator, on the right in the picture, has a capacity of 8,000 bushels of shelled corn and 10,000 bushels of ear corn. The driveway is equipped with a Kewanee overhead, cradle type hoist. There are two dump pits, each holding about 200 bus. of ear corn. Each pit is equipped with a Western shake feeder to feed the ear corn into the leg, where it is to be elevated as ear corn, or into the sheller. When corn is to be shelled as dumped it is fed into the Beall U.S. No. 18 sheller.

The corn, cob and all, is elevated to the top floor where it discharges into a Western Gyrating Cleaner. From here corn may be discharged to one of the four bins over the driveway, where it is loaded out by truck. Cobs are discharged into a bin on the side of the driveway from which they are removed by truck. Corn to be elevated into the crib annex is dumped into the second pit and elevated to the head where it discharges into a spout that drops to the center of the roof over the crib. Here a distributor discharges into any one of six bins.

When corn is to be shelled out of the crib storage, it is conveyed to the sheller by a Western chain conveyor which runs through the center of the crib. Each of the six bins is hopped to the center and discharges directly into a trough containing the chain conveyor.

Rail Elevator

Behind the barge elevator in the picture is the rail elevator, a 20,000-bushel concrete house on the Illinois Central siding. A new concrete driveway was added to this elevator and a Kewanee overhead air lift installed. Three overhead bins to hold about 1000 bus. each were also added over the driveway. This elevator consists of four concrete tanks with three interstice bins.

Grain may be run from this elevator to the barge elevator by means of a gravity spout. Grain from the barge elevator may also be transferred to the rail house by the same means.

Office Building

A new office building, which does not show in the picture is located directly east of the ear corn plant. Here a Fairbanks-Morse 50-ton, 45-foot truck scale serves all three plants. The office is 34'x34' and consists of three rooms and a full basement. The general office and customers' room takes up about half of the space and the remaining half contains the bookkeeper's office and the manager's office. The office is heated with an oil furnace. A concrete vault, 8' by 12' is used for storage of records.

T. P. & W. Sued by Grain Shippers

Grain elevator operators at Fairbury, Gridley and Secor, Ill., brought suit Feb. 15 against the Toledo, Peoria & Western Railroad Co. to recover \$300,000 damages for failure to give box car service during the long strike against the company.

States Grain Corp. Buys Chicago Elevator

States Grain Corp., 37 Wall St., New York, N. Y., of which Milton May is president, bid in the 350,000-bu. grain elevator of the Northwestern Yeast Co. at Chicago at auction Nov. 25 for \$23,000.

For the time being the house will be used for storage. However, an adjoining soybean oil extraction plant will be built as soon as possible, according to reports.

Mr. May is associated with R. F. Cunningham & Co., New York, which company operates a sub-terminal elevator at Pittsburgh, Pa., and also with the Harper Feed Mills of Pittsburgh, Pa., and Washington, Pa.

November Receipts and Shipments

Receipts and shipments of grain at the various markets, in addition to those published in Dec. 10 issue of Grain & Feed Journals, as compared with those of November, 1946, in bushels are:

	WHEAT		Shipments	
	1947	1946	1947	1946
Ft. Wm.	18,680,860	26,393,430	27,830,323	29,843,169
Los Angeles	380,800	.....	.....	.....
Memphis	14,000	11,000	.....	.....
New Or'l'ns	3,336,062	737,875	2,310,211	1,475,987
New York	3,308,944	992,054	1,461,000	1,119,000
Portland	1,598,216	799,464	1,452,070	795,287
	CORN			
	1947	1946	1947	1946
Ft. Wm.	.....	74,661	1,264	18,085
Los Angeles	207,000	.....	.....	.....
Memphis	154,800	207,600	.....	.....
New Orleans	28,500	645,812	9,000	149,057
New York	13,390	16,507	4,000	.....
Portland	45,832	91,121	.....	.....
	OATS			
	1947	1946	1947	1946
Ft. Wm.	6,929,846	6,370,859	10,559,316	7,687,082
Los Angeles	64,000	.....	.....	.....
Memphis	60,000	129,000	.....	.....
New Or'l'ns	.....	161,991	20,968	166,557
New York	48,755	97,500	.....	76,000
Portland	112,281	76,528	.....	.....
	BARLEY			
	1947	1946	1947	1946
Ft. Wm.	4,928,534	1,729,191	8,191,138	4,908,969
Los Angeles	190,400	.....	.....	.....
New York	.....	6,900	.....	.....
Portland	327,249	179,793	561,880	.....
	RYE			
	1947	1946	1947	1946
Ft. Wm.	1,162,371	703,708	2,356,499	2,256,910
New York	5,690	.....	.....	.....
Portland	4,788	4,641	848	.....

Special Celebration of St. Louis' Exchange 111th Annual Meeting

Robert C. Woodworth, Minneapolis, chairman of the National Grain Trade Council, will be the featured speaker at the one hundred eleventh annual meeting of the Merchants' Exchange of St. Louis, the nation's oldest organized grain exchange, which will be held Thursday, Jan. 8.

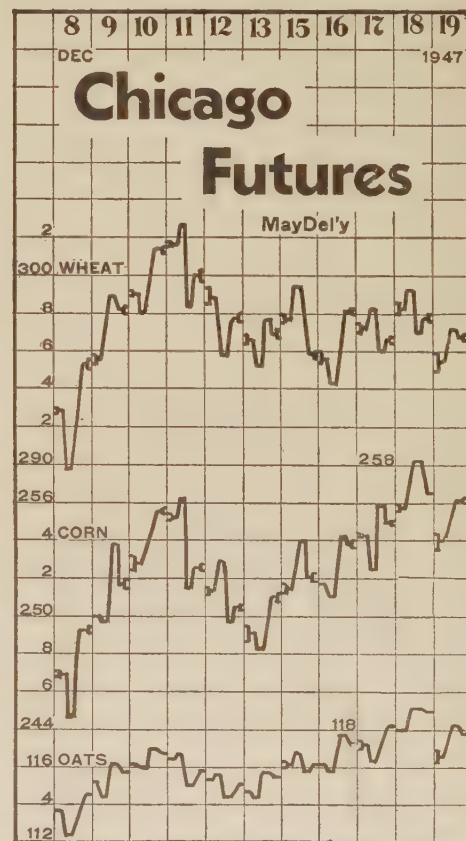
Also appearing on the program with Woodworth will be H. R. Diercks, pres. of the Merchants' Exchange, and Edward Schurmann, pres. of the St. Louis Milling and Grain Club. R. H. Dean, manager of the grain buying division of Ralston Purina Co., and chairman of the Merchants' Exchange annual meeting committee, will be toastmaster at the meeting which will be in the form of a banquet at the Statler Hotel.

Stop Fires—Save Jobs

To assist business and industry in reducing the increasing number of fires that last year destroyed more than a quarter of a billion dollars worth of factories, plants and stores, killing hundreds of workers, the National Board of Fire Underwriters has published a 16-page booklet, "Stop Fires—Save Jobs."

The booklet seeks to inform employees about the basic elements of fire protection, so they will recognize the operation and importance of sprinkler systems, fire extinguishers, automatic alarms, fire doors, exit drills and other safeguards. The booklet also tells how to detect and remove hazards that are common to most industries and shows how to eliminate special hazards found in many businesses.

Copies of the booklet may be obtained free from the National Board of Fire Underwriters, 85 John Street, New York 7, N. Y.



Insurance on Elevators and Feed Plants

Excerpts from an address by J. R. McCann before the Grain Elevator Management School at Springfield, Ill.

About the turn of the century, flour mills and grain elevators were looked upon with disfavor by the insurance companies then in operation. Insurance rates were high and very often it was impossible for a plant owner to obtain adequate insurance protection. In various sections of the country, grain men, dissatisfied with the service they were getting insurance-wise, organized their own companies. In each instance, emphasis was placed upon a study of the fire hazards in grain plants, to the end that these hazards be eliminated, with a consequent reduction in the fire losses and lowered insurance costs. There are today ten of these mutual companies specializing in the field of mill and elevator insurance and associated under the name of the Mill Mutual Insurance Companies.

The Insurance Contract

Your fire insurance policy is a contract between you and the insurance company. It is legal and binding, and as in the case of any contract, there must be a consideration to make it valid. In the case of your insurance policy, the premium you pay is the consideration. Under certain conditions, the contract is cancellable by either party. The contract is a personal one insuring a particular person or firm, and does not insure a piece of property regardless of a change in ownership. The policy is one of indemnity, and the company contracts only to indemnify you for actual loss sustained, and it is not intended that a policyholder profit by a fire. "Actual cash value" is a term used much in insurance and, by definition, it means the replacement cost of a plant, for instance less depreciation.

Increase in Hazard

It is a stipulation of the insurance contract that the policy shall be void if the physical hazard be increased without notice to the insuring company. This is only reasonable and fair. In the first place, the rate charged for the contract is predicated upon the hazards involved, so if there is an increase in hazard, the rate should be increased. Otherwise, there would be discrimination as between policy holders, and the insurance company would not be receiving income commensurate with the probability of loss.

Secondly, it is possible that the increase of hazard might be of such a proportion that the insurance company might not wish to assume the risk regardless of rate, and if such is the case, the company is in all fairness entitled to terminate the contract. As a matter of fact, insurance companies are not inclined to be overly technical in this respect, but they are protected if they care to stand strictly on the policy contract. So, for both that reason and for another, which will be commented upon later, make it a point always to notify your insurance company of any change in hazard about your property.

Buy complete insurance protection. Fire coverage, plus the various supplemental coverages, costs but little more than fire or wind alone, and any additional premium you pay is well spent.

Co-Insurance

Some companies offer the use of co-insurance clause to grant the policy holder the benefit of rate reductions and at the same time maintain proper insurance to value on a property. Properly used and understood, the co-insurance clause is a boon to both insured and the company. Misused and misunderstood, the clause contains many a pitfall for the unwary. For illustration, let us assume that the policy insuring your elevator building and machinery contains an 80 percent co-insurance clause. This means that you as the policyholder agree to carry insurance equal to at least 80 percent of the sound insurable value of your plant, and the failing to do so, in case of a partial loss, you become a co-insurer along with the insurance carrier for the deficit. If you are certain of the sound insurable value of your plant and then live up to your agreement of carrying insurance equal to at least 80 percent of that value, you have nothing to worry about.

Premium Adjustment Plan

There are two plans for insuring your grain and stock. One of these is known as specific insurance, and the other and by far the most common is the reporting or premium adjustment plan. Under the specific plan, a specific amount of insurance is written on grain, this amount being increased as inventories rise, and insurance cancelled out when inventories fall. Along with the bother of continually adjusting insurance to stocks on hand, there is the possibility of either over or under-insurance, with the result that few policyholders these days continue specific coverage. Years ago, it was the only plan available for handling insurance on stock.

Because of the wide fluctuations in inventories, most grainmen prefer the reporting or premium adjustment plan. Under this plan, a limit of insurance is set, based upon the maximum values anticipated. Reports are made of the value of grain in the house, usually at the close of business on each Saturday night, and these reports filed monthly with your insurance company. This type of insurance demands that the policyholder maintain records which will enable the adjuster to determine what stocks were on hand should a loss occur and a perpetual inventory system is the most commonly used. Under the reporting plan of insurance, as long as reports are correctly made, insurance coverage automatically follows inventories up to the limit of insurance. Stocks held for shipment should be reported at best track bid, while stocks held for resale should be reported at cost to replace.

Reporting

Under the reporting policy, you are obligated to report full values, and failing to do so, you will be penalized in a loss adjustment. You can't expect to pay insurance premiums on only a part of your values and then collect full insurance should a loss occur. The companies are constantly reminding you to report full values. There

is a difference in the way the penalty is applied under the mutual and stock company forms in use. Under the mutual form, the penalty for under-reporting is on the basis of the average amount under-reported, while the stock company form penalizes on the percentage of under-reporting. The penalty under the mutual form is less severe should a loss occur if inventories have increased since the last report filed with the insurance company. Conversely, if inventories have fallen since the last filed report, then the percentage penalty for under-reporting under the stock company form is likely to be less severe.

Summarizing these remarks on property insurance, let me urge you to buy it wisely. Your insurance policies represent an important part of the credit and financial structure of your business, and you should give the same serious consideration to the purchase of insurance as you would to the purchase of a new home, a new car, or new machinery for your plant.

This discussion of insurance properly should contain a few brief remarks concerning WORKMEN'S COMPENSATION and PUBLICITY LIABILITY insurance. You, as the owner or operator of an elevator or feed mill, incur two liabilities—one is to your employees and the other is to the public. The one is statutory and the other a common-law liability. Your liability to your employees, should they be injured or killed in the course of their employment, you insure under a Workmen's Compensation or Employer's Liability policy. The cost of this form of insurance is determined by your payroll, and the schedule of benefits payable under it is set up by the State Industrial Commission.

Likewise, your liability to the public, should someone be injured on your premises, you insure under a Public Liability policy. Before you incur any liability to the general public for injuries which occur on your premises, it first must be proved that you were negligent in some respect. Perhaps the easiest understood definition of negligence is the failure to do what an ordinarily prudent man would do in the way of providing safeguards. It should be noted here that most forms of Public Liability insurance exclude property damage coverage; accidents arising from the maintenance and use of an air hoist; accidents arising from the use of a manlift; and your contractual liability under your sidetrack agreement or lease with the railroad. These coverages can be added to your liability policy by endorsement.

Minnesota Course In Milling Engineering

The University of Minnesota, in conjunction with the Millers National Federation, which is partially financing the program, has established a five-year milling engineering curriculum as a division of the Mechanical Engineering Department. Graduates of the five-year course will receive a bachelor of science degree undesignated as well as a bachelor of mechanical engineering degree. The University also announced the appointment of John M. MacKenzie as assistant professor of mechanical engineering and head of the milling engineering division. MacKenzie took up his new duties on Nov. 1.

Field Seeds

Michigan Better Barley Contest

Improvement of malting barley was the purpose of the Michigan Better Malting Barley Contest held Dec. 12 at Saginaw, Mich., where a leading speaker was Dr. John Parker of the Midwest Barley Improvement Ass'n.

Willard King, president of the Michigan Brewers Ass'n, announced the winners and presented the awards.

Cash Prizes of \$30,000 for Malting Barley

Barley growers in Illinois, Iowa, Michigan, Minnesota, North Dakota, South Dakota and Wisconsin may compete in the 1948 malting barley contest, if growing the named better varieties. For those wishing to compete the fullest information is available by addressing the Midwest Barley Improvement Ass'n, 828 N. Broadway, Milwaukee 2, Wis.

Kansas Seedsmen to Meet

O. E. Case of Hutchinson, executive secretary-treasurer of the Kansas Seed Dealers Ass'n, has sent out the program for the first annual convention of the Kansas Seed Dealers Ass'n to be held Jan. 9 and 10 at the Hotel Broadview, Wichita, Kan.

Lane Wilson, executive sec'y-treas. of the Southern Seedsmen's Ass'n, will speak on "Objectives Your Ass'n Needs to Foster." H. E. Myers of the Department of Agronomy, will speak on "Adapted Varieties of Seeds." Other speakers will handle live topics.

Export Allocations for Field Seeds

Export allocations of five varieties of field seeds, as announced by the U.S.D.A., for the 1947-48 season compared with allocations for 1946-47 are: Alsike clover, 1,100,000 pounds and 2,634,000 pounds; common (Spring) vetch, 10,000,000 and 8,068,000; red clover, 700,000 and 8,170,000; hairy (Winter) vetch, 11,000 and 62,000; crimson clover, 10,000 and 24,000.

The largest single allocation went to the U.S.-U.K. zone in Germany, with 2,000,000 lbs. of common vetch and 510,000 lbs. of alsike clover programmed for shipment.

Cherokee and Nemaha New Oats Varieties

The Kansas experiment station, Manhattan, has given the names Cherokee and Nemaha to oats varieties previously known as C. I. 3846 and C. I. 4301.

Both Cherokee and Nemaha are high yielding, high in test weight and have stiff straw varieties resistant to Victoria Blight, smut and rust. The new varieties and Clinton are the first recommended in Kansas as resistant to all three diseases.

Dean R. I. Throckmorton says the limited supply of foundation seed of Cherokee and Nemaha has been placed in eastern and central Kansas counties for further increase.

Seed for general distribution will not be available for the 1948 seeding, he added.—G. H.

C. C. Massie, Seedsman, Passes

Charles C. Massie, 75, pres. of Northrup, King & Co., of Minneapolis, died Dec. 13. He had been ill two years.

Seedsman Wins Suit

W. Atlee Burpee & Co., of Philadelphia, defendants in a suit for \$110,000 damages by a Florida grower were victorious when the U. S. District Court denied the petition and ordered defendant to pay all court costs.

The seed was proved to be of the variety ordered, and the failure of the crop was due to the methods of the grower.

Defense attorneys made the point that the grower has no legal right to sue a wholesaler with whom he had no direct transaction.

Claims He Received Wrong Seed

J. W. Powell at Yakima, Wash., has filed suit in Superior Court against General Mills, Inc., claiming the defendant's agent in Toppenish, Wash., sold him the wrong variety of wheat seed in March, 1946.

The complaint alleged Powell asked for some spring wheat seed. When the seed had not developed as it should by the following July, Powell said he found he had been sold winter wheat. He is asking for \$998 to cover the amount his wheat crop would have been worth last year if he had been given the proper seed to plant, plus the cost of the seed.—F. H.

Nebraska Wheat Show Jan. 10

J. C. Swinbank, field secretary of the Nebraska Grain Improvement Ass'n, Lincoln, urges that entries be made for the Nebraska Wheat Show to be held at Sidney, Neb., Jan. 10.

An entry shall consist of one quart of hard red winter or hard red spring wheat grown by the exhibitor in 1947. Entries must be in Sidney or Lincoln not later than Jan. 7. Entries may be sent to W. P. Bullock, County Agricultural Agent, Sidney, or to the Nebraska Grain Improvement Association, College of Agriculture, Lincoln 1.

J. Wesley Nelson, research director, feed department, Cargill, Inc., was awarded a prize in a nation-wide contest featuring better nutrition for livestock thru the use of vitamin D in feeds. The contest was conducted by Standard Brands, Inc., New York City.—P.

The Bureau of the Census estimated that 24.9 million sacks of wheat flour were produced in July, a 3 per cent increase over the 24.2 million sacks produced in June, and 13 per cent greater than the July 1946 output of 22.1 million sacks.

Europe Will Try Hybrid Corn

The Food and Agriculture Organization of the United Nations announced Dec. 12 that 28 bushels of hybrid corn seed will be sent to experiment stations in Austria, Czechoslovakia, Hungary, Italy, Poland, and Yugoslavia, in time for spring planting in 1948. Sending of the seed follows up the work begun at the hybrid corn demonstration school in Bergamo, Italy, last August.

Seed Research Recommended

Recommendations for research in the year 1948-49, under the Research and Marketing Act, on the marketing and production of seeds, have been made by the Seed Advisory Committee, to E. A. Meyer, administrator of the Act.

The recommendations result from a recent two-day meeting in Washington, in which the committee reviewed seed projects of the current year, and also were informed of other seed research in the U. S. Department of Agriculture. Suggestions for marketing and production research were made under two headings—forage crop seeds and vegetable seeds.

In the field of marketing the committee made these recommendations for work with forage crop seeds: (1) Build up foundation seed stocks of improved small seeded legumes and grasses, so that American farmers may always be able to obtain good seed in amounts as needed. (2) A current project on prevention of insect damage to stored seed stocks should be expanded to include determination of best methods of storing seed to preserve quality and longevity, effect of temperature and humidity, and development of regulating equipment and storage structures. (3) A current project on developing methods of marketing seed of improved grasses and legumes so as to maintain their identity, should be continued until completed. (4) A study should be started on standardization and coordination between states of sampling and testing methods to obtain purity and germination of seeds.

In the production of forage crop seeds the committee made three recommendations: (1) Develop more efficient machinery for harvesting legume and grass seeds. (2) Determine reasons for low seed yields and develop better methods of harvesting seed of small seeded grasses and legumes in the north central and southern states. (3) The current project on the toxicological effects of insecticides, fungicides and herbicides on plant growth, soils and the marketability of crops grown on such soils.

Members of the committee, all of whom were present at the meeting are: Carl F. Barnum, Buffalo, N. Y., chairman; Lloyd M. Brown, Chicago; Dr. W. L. Burlison, head, College of Agriculture, Urbana, Ill.; Merritt Clark, New Haven, Conn.; Harrison Evans, Shuqulak, Miss.; Ray H. Lang, Madison, Wis.; R. A. Krantz, Hutchinson, Kan.; Robert Pease, Beatrice, Neb.; Maurice A. Perry, Hemet, Calif.; John D. Remsburg, Jr., Rupert, Idaho; Jess E. Van Fossen, Croton, O.

Hybrid Corn Takes Over

By GILBERT H. AHLGREN, Associate Agronomist, New Jersey Agricultural Experiment Station.

Corn is a native American crop, which history credits Columbus and his sailors as being the first white men to see. The early colonial settlers at Jamestown and Plymouth were saved from starvation by corn, the cultivation and care of which they learned from the Indians. Today this crop forms the backbone of the American livestock industry. Grown in every state, the 100 million acres planted annually are of greater economic importance to our agriculture than is the combined value of all other cereal crops, including wheat, oats, barley, and rye. In 1942, American farmers produced more than 3 billion bushels—the largest corn crop in our history—about 80 per cent of which was fed to livestock. The rest was sold for industrial purposes and human consumption.

The present widespread popularity of corn is due to the hundreds of outstanding varieties that have been developed and that permit the growth of the grain under varied soil and climatic conditions. Under favorable conditions corn produces a greater yield of grain and of total digestible nutrients per acre than any other crop now grown. The grain is highly nutritious and excellent for fattening cattle or hogs and for utilization in dairy and poultry rations.

But corn has not attained these advantages over the other grain crops by haphazard chance. The first white settlers in America found the Indians growing native varieties of flint, flour, sweet corn, and popcorn. The Indians also had some dent corn but this was found only in very restricted areas. One of the white man's greatest contributions to corn growing is the development of hundreds of varieties of dent corn, making it the most widely grown and popular type in America today.

Early Selection Methods

Since the time of the early American colonists, growers have attempted to select and breed corn for higher production, better adaptation, superior ear type, and many other characteristics. The first method of improvement may be called "mass selection." This involved the selection of seed from superior plants in the field and the bulking of this seed for planting the next year. Results were limited by the judgment of the grower in making selections, by the degree of superiority of the best plants, and by contamination with pollen from inferior neighboring plants. In spite of these limitations many important varieties of open-pollinated corn were developed by this procedure.

A second method of improvement was "ear-to-row selection." This involved selecting superior ears, planting a portion of the seed from each ear in a separate row, and measuring the yields of the resulting plants.

Hybridization Discovered

In 1905 Professor G. A. Shull, working for the Carnegie Foundation at Cold Harbor, N. Y., discovered this new way of breeding corn. At that time he was engaged in a purely genetic study of the effects of self-pollination and subsequent crossing. Professor Shull's notes on the increased vigor of the hybrids he produced

by this technique aroused considerable interest among plant breeders, one of whom was Professor E. M. East, then at the Illinois Agricultural College. Later, at the Connecticut Agricultural Experiment Station, Professor East expanded his research on corn breeding, and following Shull's method, produced inbred lines from which he made hybrids, subsequently proving their superiority over ordinary open-pollinated varieties. This work of Shull and East opened a new era in corn variety improvement.

A number of serious problems had to be solved before the farm use of hybrid corn became practical. The single cross procedure of producing seed was very costly when the yield was balanced against the labor involved. Then again, the kernels produced by crossing two inbred types (the single-cross technique of Shull and East) were small and could not be seeded evenly by the ordinary corn planter. Hybrid corn, therefore, was for a while only of scientific interest. In 1919, however, Dr. D. F. Jones, of the Connecticut Agricultural Experiment Station, suggested making double-cross hybrids, a process involving crossing or hybridizing two single-cross lines, and many of the drawbacks of the single-crossing were eliminated.

Corn Breeding a Long Process

The production of hybrid corn involves a long-time breeding and testing program. It is a relatively expensive procedure, requiring land, labor, and the services of a trained plant breeder. It is ordinarily conducted, therefore, only by state agricultural experiment stations or by large seed companies. A corn breeding program usually begins with the collection of a large number of open-pollinated field corn varieties. Available hybrids of various kinds may also be utilized. The collection of breeding materials from a large number of sources is desirable since it assures a wide genetic base, which is helpful in securing hybrid vigor when inbreds are recombined.

INBREDS are produced by a process known as selfing, or inbreeding. The pollen factor in corn is produced by the tassel; the ear is the seed part of the plant. Corn is a naturally cross-pollinated plant; that is, pollen is carried by the wind from the tassels of various plants to the silks on the ears of other plants, thus effecting cross-pollination. Selfing consists of taking pollen from the tassel and placing it on the silks of the same plant which produced the pollen. If this process, accompanied by careful selection, is continued for a number of years, a pure line of corn will result. Inbreeding results in smaller plants and lower yields, a condition described as loss of vigor. This change in plant vigor does not disturb the breeder since he knows vigor will be restored when proper crosses are made.

Selfing usually continues until all plants

of a line are exactly alike in their outward appearance, the pollination being controlled by covering each earshoot with a glassine or parchment bag before the silks appear. This bag is removed to enable the breeder to sprinkle pollen on the silks, and then it is replaced for further protection. After pollination has been completed a brown paper bag is placed over the earshoot and the protective glassine bag. Proper labels for identification are then attached to the paper bag, and the ear is permitted to mature within its covering. After inbreeding has proceeded from three to five or more years, the lines should be relatively pure genetically and then the breeder is ready to proceed with crossing or hybridizing.

As stated previously, hybrids may be produced by crossing two inbred lines; that is, taking pollen from one line and placing it on the silks of another. This is known as a single cross. It is sometimes practical to make three-way crosses in which three inbreds are involved, or double crosses in which four inbreds constitute the parentage. The double-cross is the method used for hybrid seed production by most commercial growers. After the hybrids are produced it is necessary to test them against standard varieties for several years to establish their comparative value. Those hybrids which appear superior are then planted in state-wide tests to determine their range of adaptation, during which time the inferior varieties are discarded. Experiment stations have tested thousands of hybrids by this general procedure. A large number of superior inbreds have been developed and are being extensively utilized in new hybrid combinations.

Big Yields

Many may wonder why hybrid corn has become so popular with American farmers. Fundamentally the answer is one of economics. Hybrid varieties usually outyield open-pollinated types by as much as 10 to 30 per cent, and in addition are much more uniform and often possess such characteristics as increased leafiness and greater resistance to drought, lodging, and insect and disease infestation.

New Jersey Starts a Program

In 1923 the New Jersey Experiment Station began a corn breeding program to develop superior hybrids. The first adapted hybrid was released in 1935 although several hundred were tested before a markedly superior one was found. New Jersey now has two well-adapted hybrids which are extensively grown in this state. They are known as New Jersey Hybrids Nos. 2 and 4. They have proved superior for grain and silage to all other varieties tested in this locality to date.

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Fodder Seeds, Sudan Grass, Soy Beans, Cow Peas

Feedstuffs

Southern Feed Control Meet at Asheville

The Ass'n of Southern Feed Control Officials will hold its annual meeting June 7 to 9 at the George Vanderbilt Hotel, Asheville, N. C.

Infringement of Trade-Mark

Fred H. Moore, owner of Hilltop Laboratories, was given judgment Dec. 8 by the U. S. District Court at Minneapolis, Minn., against his brother, Frank E. Moore, operator of the Hilltop Farm Feed Co. for violation of a contract under which Fred had purchased an insecticide business and the exclusive right to use the trade name "Hilltop."

The court awarded Fred Moore all profits made by defendant on competing products between June, 1943, and April, 1946.

Control Officials and Feed Mfrs. in Joint Meeting

The States Relations Committee of the Ass'n of American Feed Control Officials and the Committee on Definitions and Contacts of the American Feed Manufacturers Ass'n held a joint meeting recently at the Shoreham Hotel, Washington, D. C., and discussed at length various problems common to both organizations.

A resolution calling for the prohibition of the use of mineral oil in commercial feeds in amounts that may be deleterious to the animal or bird was passed at the meeting as was a resolution disapproving the use of artificial colors in feedstuffs, excepting only the use of a Federal Food, Drug and Cosmetic certified dye or dyes to indicate the distribution of a valuable ingredient or ingredients or to increase or aid the proper intake of a feedstuff.

States Have Jurisdiction Over Raw Materials

It was the general opinion at the meeting that the States have jurisdiction over raw materials or ingredients when such raw materials or ingredients are used as is by consumers. The use of the product by consumers takes it entirely out of the ordinary meaning of the word "ingredient," and makes it, in the words of the statutes, "a commercial feeding stuff." The exemption from statutory requirements as to licensing applies, therefore, only to feedstuffs which are used as ingredients in registered feeds only, by manufacturers. Shipments of commercial feedstuffs made to manufacturers to be used for the purpose of mixing feedstuffs, therefore, are not required to be registered where these products are used only as ingredients in the mixing of feedstuffs that are properly registered in the State under their own names.

Custom Mixing

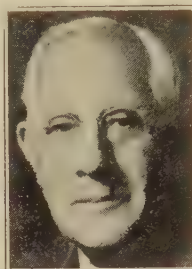
Referring to the practice known as "custom mixing," it was the opinion that the product of such mixing is within the statute unless the component parts of the mixture

are licensed and tagged in compliance with the statute. Therefore, shipments of ingredients made to manufacturers who do "custom mixing" or who offer such products for resale must be registered and tagged, unless such manufacturers have such feedstuffs, the component parts, registered and licensed under their own name.

A. K. Zinn, an Old-Timer

The same year that A. K. Zinn started his little feed business in Galesburg, Mich., Thomas Edison perfected the cylinder type of phonograph. That was exactly sixty years ago in 1888.

Records show that Zinn's feed manufacturing plant is the second oldest serving the farmer through dealers in the United States. Today Zinn is in very good health, will be 82 years old next year and goes to his office nearly every day. He lives on his farm where he has two projects, broilers and a big apple orchard.



Hormone Study May Raise Quality of Poultry Meat

Scientific hormone studies indicate that quality of the nation's poultry meat production may be boosted appreciably by addition of certain chemicals to the chicken's diet, but the old barnyard rooster may lose his crowing ability in the process.

Prof. R. George Jaap of the Ohio State University poultry husbandry department said Dec. 14 that poultry of either sex and of almost any age can be fattened rapidly and without extra feeding by treatment with feminizing hormones known as estrogens.

The fattening process, which results in higher quality poultry meat, has been induced in growing chickens, capons and roosters through use of these chemicals.

Several estrogenic compounds have been employed in Professor Jaap's research by injection, feeding and by implanting pellets under the chicken's skin. One chemical, diethylstilbestrol, produces maximum fattening results in about four weeks' time when introduced by the pellet method. Use of this pellet for poultry fattening has been approved by the Federal Food and Drug Administration. However, employment of this group of chemicals in poultry feed is not yet permitted.

To date the most rapid fattening process for chickens has been obtained from use of about 40 milligrams of dianisylhexene in oil solution per pound of feed. Professor Jaap reports that this method produces the maximum response within two weeks, although it is not as great as that for the pellet implant of diethylstilbestrol over a period of four weeks or more. The dianisylhexene feed also shows promise in fatten-

ing turkey broilers as well as turkeys at the normal market age.

Doubling of most estrogens' normal dosages in poultry may cause deaths due to excessive blood fats.

Cattle Feeding Situation

Washington, D. C., Dec. 12.—Shipments of stocker and feeder cattle into the corn belt states in November were about 25 per cent below November, 1946, and were the lowest for any November since 1940. For the 5-month period, July thru November, the number of stockers and feeders shipped into the corn belt was 17 per cent less than for the same period a year ago. However, this in-movement is still relatively high, being exceeded only 3 times in the past 8 years.—U. S. D. A.

North Dakota Feedmen Organize

Meeting at the Hotel Gladstone, Jamestown, the North Dakota division of the Northwest Retail Feed Ass'n, last month elected the following officers: President, A. L. Haroldson of Devils Lake; vice pres., J. J. Ebel, Jamestown, and secretary, Loyd A. Hansen of Grand Forks.

President Haroldson reported on the work of the tax committee which sought to repeal the portion of the North Dakota sales tax act covering sales at retail. The committee appeared before the legislative tax bodies and pointed out that such taxes were in effect double taxation. The legislative tax committee appeared to concur in this view and promised action on the matter, but the session ended without the revision being made.

Heavy Fire Loss at Kentucky Feed Mills

Fire believed to have started on the third floor of the Sun-Ray Feed Mills' plant at Lexington, Ky., Nov. 26, destroyed that company's mill and concrete elevator, and falling walls of the burning mill severely damaged the adjacent Blue Grass Feed Co.'s plant. O. L. White, vice-president of Sun-Ray Feed Mills, producers of formula feeds for livestock and poultry, placed his company's loss at \$250,000. Forty thousand bushels of grain were destroyed with the elevator. A series of sharp explosions from 55-gallon drums of stored fish oil and a basement vat of black-strap molasses rocked the building, blew out air-tight doors and shattered walls. The company, a subsidiary of the Woolcott Flour Mills Co., is back in operation on a limited scale in a company warehouse.

W. B. Talbert, owner of Blue Grass Feed Co., writes that damage to his plant included the roof of the building, which must be replaced, and to the three-story structure's north wall, which caved due to the falling wall of the adjoining five-story brick wall, and also damage from water and falling debris.

Poultry Rations

By E. I. Robertson of Cornell

Feed supplies are short and, while research has made rapid advances during the war, most feed manufacturers are forced to consider quality in terms of availability. With inadequate supplies, it is urgent that research findings be applied where they will bring the greatest benefits to the entire poultry industry. Published experimental results, reviewed briefly here, are available for application by feed mixers and dealers throughout New York State.

Source of Carbohydrates

Recent work at Cornell, Connecticut, Indiana, and elsewhere has shown improved growth, better maintenance of body weight, and higher egg production when whole grains low in fiber replaced wheat by-products in the ration. Heavy oats, in general, were equal to corn, though light oats reduced the rate of gain.

The apparent explanation for these results is that poultry are unable to digest appreciable quantities of fiber and thus nutrients locked in high-fiber feeds are not made available. The superiority of wheat and corn over other grains and grain by-products appears to be in the availability of their nutrients.

The Animal Protein Factor

This factor is still an unknown, though research at several laboratories has shown the need for some factor which apparently is not an amino acid but which is associated with proteins of animal origin. It is needed for growth of chicks, body weight maintenance of layers, and for hatchability. Good sources of this factor are fish meal, fish solubles, meat scrap and milk products. Dried cow manure contains the factor and it has been concentrated in a potent extract. Results from Ohio and Washington show that the factor can be transmitted from the breeder ration through the egg to the chick. Under general feeding conditions, 100 pounds of animal protein supplements in a ton of feed will supply adequate levels of this factor.

High Protein Starting Rations

Experimental work reported from California and Oklahoma showed a weight advantage at 8 and 10 weeks of age in chicks that received a 30 per cent protein ration, even for only the first week or two. Since it is known that protein requirements decrease with age, it was believed that protein level might be limiting growth during early life. More recent experiments, however, at Connecticut, Cornell, and industrial laboratories, in which protein of high quality was used and with rations well fortified in other growth factors, showed no advantage of high protein rations. There appears to be no advantage of protein levels beyond 20 to 22 per cent for starting chicks, providing the ration is adequate in other growth factors such as water soluble vitamins and the "animal protein factor."

Protein Quality for Poultry

It has been recognized for some time that protein supplements differ in their usefulness to poultry. Experiments at Cornell, Washington, and California have shown

that, pound for pound of protein, poultry are able to show more response from fish meal protein than from meat scrap protein. Protein quality is more important for poultry rations than for cattle since ruminants are able to make use of protein of lower quality through the bacterial action in the rumen. The relative efficiency of protein from various sources has been measured in relation to casein from milk arbitrarily given a value of 100.

RELATIVE EFFICIENCY OF PROTEIN

Casein	100
Meat scrap (55% protein).....	82
Meat scrap (50% protein).....	73
Fish meal	
White—steam or vacuum dried.....	104
White—flame dried	94
Menhaden steam dried.....	91
Sardine meal	98
Soybean (raw)	58
Hydraulic processed meal.....	85
Expeller processed meal.....	89
Solvent processed meal.....	92
Corn gluten meal.....	58

Because of its superior qualities, the best use of fish meal is in starting and breeding rations where the quality brings the greatest returns.

Amino Acids for Poultry

The requirement for protein is actually the requirement for different amino acids. These "building stones" make up the protein much as bricks make up a building. About 23 amino acids are known, but only about 10 are essential for poultry, and of these only six require special consideration in compounding rations. The level of these amino acids for a chick starting mash, as recommended by the National Research Council, is as follows:

TENTATIVE REQUIREMENTS OF CHICKS (0-8 WEEKS) FOR CERTAIN AMINO ACIDS

Amino acid	Per cent of ration
Glycine	1.0
Arginine	1.0
Methionine	0.9
or methionine	0.5
and cystine	0.4
Lysine	0.9
Tryptophane	0.25

Present information on the amino acid content of feedstuffs is very limited. Furthermore, so little is known of the requirements other than for young chicks as to make a starting ration about the only one where calculation of amino acids is practical.

Fattening Agents

Two types of fattening agents for poultry have been widely reported in recent scientific literature. Synthetic estrogens have been shown to produce a feminizing effect when implanted in cock birds. The accelerated rate of fattening has improved the quality of meat in old male birds similar to the improvement in quality of meat produced by mechanical caponizing. Diethylstilbestrol has been the compound used mainly for implants for tenderizing mature cock birds, and its use for this purpose has recently been permitted by the Food and Drug Administration. This compound, however, is not effective when administered in the feed. Dianisylhexene and other related compounds have been effective in promoting fattening in male and female broilers and older birds when incorporated in the feed.

Thiouracil has also been shown to be an effective fattening agent when measured by the improvement in market grades of chickens. The effect of thiouracil is to block the action of the thyroid gland and thereby lower the metabolic rate in the activity of chickens. The result is a more sluggish disposition with an increase in fat deposition.

The small quantities of either type of compound required to produce maximum results indicate their adaptability to commercial feed manufacturers, once their use is permitted by the Food and Drug Administration.

Phosphorus Supplements

Phosphorus usually requires special consideration in formulating poultry rations, especially with increased use of plant proteins. Experimental work has shown that the phosphorus in grains and seeds is not well utilized by poultry. It is necessary, therefore, to furnish some inorganic phosphorus which is supplied by fish meals and meat scrap, as well as the common mineral supplements—bone meal, dicalcium phosphate and defluorinated phosphate. The National Research Council recommends that rations for chickens contain at least 0.2 per cent of inorganic phosphorus and that turkey rations contain at least 0.4 per cent. In the light of recent evidence, obtained at Connecticut and Cornell, it is probable that chick rations should contain even more than the 0.2 per cent recommended.

Comparison of sources of phosphorus by Gillis at Cornell showed dicalcium phosphate, bone meal, and defluorinated phosphates, including superphosphate, calcined or fused rock phosphate, to be equally well utilized by poultry. Vitrous calcium metaphosphate, a type found in fertilizer, was only partially available. Calcium phytate (similar to the phosphorus in grains) crystalline calcium metaphosphate, and crystalline calcium pyrophosphate were unavailable to poultry.

It is not known whether other species are as critical of their source of phosphorus as is poultry.

Effect of Excess Calcium in Poultry Rations

Calcium, along with phosphorus and vitamin D, is needed for bone development in young birds and for production of eggshells in mature stock. While considerable variations in the calcium level is possible, excess calcium reduces growth and increases leg malformation in growing chicks. In rations for hens excess calcium decreases egg production and causes poorer shell quality. For best results, calcium in chick rations should not exceed 1.6 per cent, nor 3.0 per cent in rations for hens. In practice, about 2.0 per cent calcium in laying and breeding mashes, with calcium supplements available to the birds at all times has proven satisfactory.

The effect of excess calcium is not well understood, though it is believed to be chiefly the disturbance of the calcium-phosphorus ratio. An excess of either of the minerals is eliminated as insoluble tricalcium phosphate with a ratio of 3 parts of calcium to 2 parts of phosphorus. Consequently, a great excess of calcium may actually produce a phosphorus deficiency, since phosphorus is needed to get rid of the extra calcium.

Effect of Feed Intake

Poultry requirements for various nutrients, such as protein, minerals and vitamins, are usually shown as a percentage of the ration. Actually, it is a quantitative requirement of protein or other nutrients per unit of body weight and per unit of production. When requirements or allowances are listed as a percentage of the feed, an arbitrary rate of feed intake is assumed. Consequently, an extra margin of safety is automatically provided when feed intake is increased beyond the average assumed in determining the requirements.

Total feed intake also determines the rate of growth and egg production to a much greater extent than the proportion of mash and grain. This is strikingly shown in the high maintenance requirements of layers. About 80 per cent of the feed consumed by mature hens is used for body maintenance, such as keeping warm, digestion, respiration, and replacement of worn out tissue. Only beyond this requirement does feed go to produce eggs. Putting it another way, four pounds of feed must be consumed for maintenance before the fifth pound can be used for eggs.

Consequently, poultrymen may well devote their attention to practices that influence total feed intake of laying flocks. Mash and grain systems of feeding offer more variety and increase feed consumption above that of an all-mash ration. Pellets and wet mash offer a means of increasing feed intake. Management practices, such as feeding fresh mash daily, stirring the mash in the hopper, providing adequate mash hopper space, and plenty of clean water automatically improve the performance of the feed.

RELATION OF DAILY FEED INTAKE TO EGG PRODUCTION (100 BIRDS)

Production Per cent	each) Pounds Light breeds (Av. 4 lbs.)	Heavy breeds (Av. 5½ lbs. each) Pounds
0 (maintenance)	19	22
10	20	23
20	21	24
30	22	25
40	23	26
50	24	27
60	25	28
70	26	29
80	27	30

Misbranding of Feed

The Food and Drug Administration has just issued its report on the condemnation of two 500-pound barrels and twenty-two 50-pound cans of Stock Gro shipped from Wapakoneta, O., in August, 1945.

The government found that the label was false and misleading, and the article would not be effective. The article was an artificially colored condensed product of milk.

Suit for Infringement of Hog Remedy

Charges of patent infringement by selling sodium fluoride as a hog anthelmintic have been filed against Fidelity Laboratories of Chicago, in U. S. District Court at Chicago by the Moorman Mfg. Co., of Quincy, Ill.

The complaint alleges that the defendant company violated a patent obtained in 1936, shortly after Moorman scientists discovered the value of sodium fluoride as a large roundworm expeller for hogs.

An injunction to prevent the defendant company from merchandising sodium fluoride as a hog anthelmintic is sought. Damages are asked for past violations.

Feed Yeast From Citrus Peel Juice

The production of feed yeast, rich in high-quality protein and in the vitamin B complex, by growing the yeast on the juice pressed from ground, limed citrus peel has been announced by the U. S. Department of Agriculture, based on research by M. K. Veldhuis and W. O. Gordon.

It is estimated that a 90-pound box of citrus fruit will yield about 3 gallons of press juice of approximately 10 per cent solids. This juice is rich in carbohydrates, ideal for growing yeast. It is ready for use as it comes from the press. A pound of dried yeast can be produced from 3 gallons of the juice, and potential total production would run 30,000 tons a year. The wild yeast *Torula utilis* is used because it grows rapidly and is less susceptible to contamination than the true yeasts. The process is economical.

About half of the yeast is composed of high-quality proteins excellent in animal, and probably in human, nutrition. Yeast is also especially rich in thiamin and ribo-

flavin, and is a good source of ergosterol which, when irradiated, yields calciferol, a substance having vitamin D properties. Significant quantities of niacin and pantothenic acid are also present. It has been reported from experiments with animals that the addition of food yeast greatly improves the nutritive value of a diet derived mainly from cereals, for the biological value of mixed cereal and yeast proteins equals that of milk.

New England Feed Men to Meet at Orono

The next New England Feedmens Conference will be held Sept. 9 and 10 at the University of Maine, Orono, Me.

Secretary W. M. Anderson of 177 Milk St., Boston, Mass., writes that a fine program is being prepared and a number of nationally known speakers have been invited. The 1948 meeting will be open to poultrymen, dairymen and feeders of other livestock.



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Cobalt and Copper in Livestock Feeding

By S. E. Smith, Department of Animal Husbandry, at Cornell Nutrition Conference for Feed Mfrs.

Several cobalt deficient areas are now known to exist in the United States. According to Beeson's recent summary these are located in the states of New Hampshire, Michigan, Florida, Wisconsin, and North Carolina.

The symptoms associated with a deficiency of this element are loss of appetite, anemia, emaciation, and decreased productivity. All such symptoms could be secondary to the loss of appetite. No one has yet described a specific symptom which is diagnostic of cobalt deficiency. Such a symptom (s) is highly desirable to permit more accurate observation of deficiency areas; to aid the clinician in diagnosing the condition and to clarify the physiological role which this element plays. The best method available at present to diagnose cobalt deficiency is to feed a cobalt salt under controlled conditions, and watch for a favorable response.

Cobalt Requirements

Apparently there is a species difference in the requirement of cobalt. The available information indicates that it is required by ruminants—cattle and sheep—only. Experimental studies and observations indicate that horses, rats, and rabbits do not require the element or if they do, then the amount is extremely minute. A prevalent theory of the function of cobalt is that the element is primarily required by the microflora of the rumen and only secondarily by the animal body. This plausible theory explains a number of observations, but to date it is unsupported by adequate data and therefore remains a theory.

Little information is available as to the amounts of cobalt required by ruminants. In grazing animals the borderline intake of cobalt, above which no signs of deficiency have been observed are 0.04 ppm of the dry ration for cattle and 0.07-0.09 ppm for sheep. The therapeutic dose of cobalt is also largely undetermined and suggestions varying from 0.5-3.0 mg. per sheep per day and 3-15 mg. per cow per day have been made.

Cobalt is known to be toxic when fed or injected in excessive amounts into laboratory animals. The principal symptom of toxicity is the excessive production of red blood cells (polycythemia). From the scanty information in the literature cattle appear to be relatively resistant to cobalt toxicity. The Michigan workers have set the toxic level of cobalt for dairy calves at about 500 mg. per calf per day when orally administered and about 0.5-0.6 mgm per pound of body weight when intravenously injected.

Where there is an indicated need for cobalt supplementation of livestock, it may be given in one of several ways—drench, fertilization of the soil, in a salt mixture, or in the concentrate mixture. Although cobalt has no known function in plants, it is readily taken up by plants. Thus fertilization of the soil with 1 lb. of a soluble cobalt salt per acre will significantly increase the cobalt content of the forage and thus the intake of grazing animals. If a salt mixture is being fed, the inclusion of about ½ oz. of cobalt sulphate per 100 lbs. of salt

mixture should insure an adequate intake of the element.

While there is general agreement that cobalt supplementation be made to cows and sheep in known deficiency areas, there is yet no valid grounds for recommending the universal supplementation of feeds with cobalt.

Copper

The pioneer work of the Wisconsin workers in showing that copper is essential for the formation of hemoglobin in rats and rabbits has been amply confirmed in a number of species. How copper functions in this respect is still unknown.

From the standpoint of livestock feeding, copper is similar to cobalt in that it is an area problem in several parts of the world. In these areas the copper content of the forage is so low that animals subsisting primarily on the forage suffer from an insufficient intake of the element. In addition to an anemia, copper deficiency has been shown to manifest itself in various other symptoms.

The first copper deficient area was reported by the Florida workers in 1931. The problem, however, is present on a much larger scale in Australia where most of the experimental studies have been. The deficiency disease, variously called enzootic ataxia, swayback, and liksucht, is characterized by an irregular occurrence of anemia, nerve degenerations and "steely" wool. The nerve degenerations occur primarily in lambs and probably account for the incoordinated walk and the descriptive name "sway back." The development of "stringy" or "steely" wool is said to be the most sensitive as well as a specific symptom of copper deficiency in sheep. "Steely" wool is limp, glossy, and lacks the crimp of normal fibers. The production of steely wool is said to result in large financial losses to sheepmen in Australia.

Cattle deficient in copper show still other symptoms. In Australia the condition is termed "falling disease" and occurs in dairy cattle. Here the predominant symptom is sudden death of animals in good flesh and thought to be due to lesions in the heart muscles. Preliminary reports from Florida indicate that the condition in cattle called "pacing" disease is a copper deficient symptom. The disease derives its name from the observation that such cattle pace instead of running in the usual way. This suggests nerve degenerations of those nerve trunks concerned in locomotion.

Recently we have drawn attention to abnormalities of the hair and skin of copper deficient rabbits. Black rabbits when fed copper deficient diets develop an anemia and in addition a graying of the hair, loss of hair, and a dermatosis. Such symptoms are prevented and cured by the supplemental feeding of copper.

Copper Requirements

Data as to the copper requirements of farm animals are very scanty. In Australia if the forage of an area contains more than 5ppm of copper on a dry basis, no copper deficiency results.

Where copper supplementation of sheep is indicated, it may be fed as a drench, in a salt mixture or applied to the soil. When given as a drench, approximately 15 mg. of copper per sheep per day has given good results. Comparable favorable results have been obtained when sheep were given access

to a salt lick containing 0.25-0.50% copper. Copper sulphate when applied to the soil at the rate of 2-10 lbs. per acre of the deficient areas has resulted in a significant increase of the element in the forage.

Copper sulphate, particularly when fed over a long period of time, can be toxic. Commercial salt licks containing 5-10% of copper sulphate have been shown to be toxic to sheep. Unpublished results of the Australian workers have indicated that amounts as low as 30 mg. of copper per sheep per day fed over a period of time cause a hemolytic jaundice which is a characteristic symptom of copper toxicity.

The need of suckling pigs fed in dry lot for supplemental iron and copper to prevent milk anemia is generally recognized. However, the lack of evidence of the need of other livestock for supplemental copper, except in grazing animals in certain areas of Florida, and the danger of chronic copper poisoning rule against any general recommendation of adding copper salts to feeds or salt mixtures.

Hybrid Corn Makes Fine Poultry Feed

That there is no difference in the poultry-feed value of hybrid corn and open-pollinated corn has been shown in three tests by James Halpin, Windsor Cravens and William McGibbon in cooperation with N. P. Neal.

In these experiments care was taken to compare corn samples of the same grade. For one of them the University agronomy department supplied both hybrid and open-pollinated corn grown under identical conditions and handled in the same way.

The corn samples in each case made up 45 per cent of a starting mash compounded according to a good formula. Chicks of both light and heavy breeds were used, keeping them on the test rations for 10 weeks or more in each trial.

All three trials showed practically the same results with hybrid and open-pollinated corn. There was no significant difference as to the rate of gain or the amount of feed consumed. Results were consistent with pullets and cockerels, and with light and heavy breeds.

That the quality of the corn makes a difference was shown in one trial in which open-pollinated corn of high "seed corn quality" was compared with an inferior sample of commercial corn purchased on the open market. Chicks grew faster on rations containing "seed corn," weighing 1200 grams apiece at 10 weeks compared with 983 for chicks getting commercial corn. At 12 weeks the difference was not quite so large, the average weights being 1455 and 1214 grams.

Although good hybrid corn is unbeatable, it is a common observation that many farmers grow hybrids which are too late maturing to make good grain in any but the most favorable years. This probably accounts for a large part of what dissatisfaction there is with the feeding value of hybrid corn.

It is also recognized that the fertility of corn land affects the feeding value of the crop. Still another factor is that grain loses some of its vitamins if it becomes too old or is exposed to artificial heat at high temperatures, as in kiln-drying.

Cow Manure for Growing Chicks

By H. R. Bird, Bureau of Animal Industry,
Before Ass'n of American Feed
Control Officials

It has been known for some time that fish meal effectively supplements poultry diets in which the principal protein supplement is soybean meal. At Beltsville, a concentrate was prepared from cow manure which effectively supplemented a chick growing diet when fed at a level of 0.004 per cent. Among the essential amino acids tryptophane is required at the lowest concentration, 0.25 per cent. Since this figure is more than 60 times the level at which the crude concentrate was effective, it is evident that the concentrate did not supply significant quantities of essential amino acids.

The unknown dietary essential supplied by cow manure is soluble in water, relatively stable to heat, and occurs in association with a protein fraction which is precipitated from solution at pH 3.0, but may be separated from this fraction by enzymatic digestion of the protein and is then no longer precipitable at that pH. It is not identical with any of the known vitamins.

Much Is Unknown

Presumably the same factor is present in fish meal, dried skim milk, and in some samples of meat meal and accounts for their ability to supplement diets containing soybean meal. Many samples of meat meal contain very little of this factor. The factor is present in the feces of adult chickens as well as of cows, even if the chickens do not have a source of the factor in their diet. Recently McGinnis and others at the Washington State experiment station have shown that the factor is not formed in the chickens' digestive tract, but in the feces after they are voided. This synthesis is presumably due to bacterial action. If this is true it should be possible to produce the factor in mixtures of feedstuffs by controlled fermentation and thus supplement the inadequate supplies of feedstuffs which contain this factor naturally. It is to be expected that eventually the factor will be characterized chemically and synthesized in the laboratory.

A few experiments have been conducted to determine if this factor supplements plant proteins other than those of soybean meal. It did not effectively supplement a diet composed largely of corn and corn gluten meal. It was to be expected that the amino acid deficiencies of such a diet would not be overcome by the presence of this factor. It did supplement cottonseed meal and peanut meal, but less effectively than soybean meal. These two protein supplements probably do not contain quite as satisfactory a combination of amino acids as does soybean meal.

Very little can be said about the function of the unknown factor. Increasing levels of soybean meal increased the requirement for it, and this suggested that soybean meal might contain a substance detrimental to growth and hatchability, the influence of which was overcome by the factor in cow manure. It seems more likely now that the harmful effect of high levels of soybean meal is not due to a specific inhibitor but to a high level of protein and that the unknown factor is required for metab-

olism of protein. If this is true the diet consisting largely of soybean meal and corn must be a peculiarly suitable one with which to demonstrate the effect because of its lack of the essential factor and because of its satisfactory combination of amino acids which permits good growth and hatchability when the factor is supplied.

Effective with Soybean Meal

It should be stated at this point that the unknown factor is most effective when fed with properly heated soybean meal. It does not overcome the nutritional inadequacies of raw soybean meal.

The question may be asked as to whether this factor is required by animals other than chickens. There are several facts about it which suggest that it may be identical with the unknown nutrient described some time ago by Cary and Hartman as essential for rats. There are, however, some unexplained differences in distribution and a final decision on this point must await further investigation.

National Committee to Work on Feed Rules

Suggestions for changes, additions and corrections in the feed trade rules are invited by the subcommittee of the Grain & Feed Dealers National Ass'n, addressed to the office in the Merchants Exchange Building, St. Louis, Mo.

Eugene Dreyer is chairman of the committee. Other members are Arthur F. Hopkins, Boston, Mass., and H. V. Nootbaar, Pasadena, Cal.

Coffee Pulp a New Feed

Coffee pulp is the fleshy covering of the coffee bean, and is largely a waste product. Altho it has a limited use as fertilizer, its disposal is usually a problem.

Digestibility of dried coffee pulp approaches that of corn, and, while its palatability when fed alone is unsatisfactory, this is of secondary importance when it is used as a ration component. Mixture with dried banana leaves, molasses or other feedstuff materially increases the palatability of the dried pulp so that animals will readily consume it.

Additional tests are to be made relative to the feed value of coffee pulp and will include studies regarding its possible use as feed for poultry and other animals. Some of these tests will be made at the U. S. Department of Agriculture's research center at Beltsville, Md., and others at various state experiment stations. An air shipment of 100 pounds of pulp has been consigned to Beltsville, and will be followed by a 1-ton water shipment.

It is estimated that, if all the available coffee pulp of the coffee-producing countries of the Western Hemisphere were converted into feed, it would have a feed value equivalent to 34,000,000 bushels of corn. This is a little more than 1 per cent of the average 1943-47 United States corn production.

The process by which coffee pulp is converted into feed is described as relatively simple and economically practicable.—U. S. D. A.

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Destruction of Carotene by Dehydration

As alfalfa cures in the field the enzyme lipoxidase is responsible for the destruction of a considerable part of the carotene. Peroxidase, another oxidative enzyme present in alfalfa, is inactivated by blanching prior to dehydration. By blanching and dehydration both enzymes are inactivated and neither is regenerated during the storing of alfalfa meal for 2 months.

"Blanching of alfalfa prior to dehydration did not increase the retention of carotene during storage. Carotene destruction during storage does not appear to be enzymic in nature."—H. L. Mitchell and H. H. King, Department of Chemurgy, Kansas State College.

Starting and Growing Rations for Turkeys

In five trials a starting ration containing 10 per cent of dried skim milk and 24.1 per cent of protein gave significantly greater increase to 12 weeks of age in only one test for poults of both sexes and another trial for males than a 5 per cent skim milk and 22.8 per cent protein content. No differences were noted in the efficiency of the two rations or the mortality. Some of the poults started on wire floors developed slipped tendons, a need of additional manganese sulfate being suggested.

In seven experiments with turkeys raised in confinement and one on range, all mash rations comparing 23 or 16 per cent of protein were fed ad libitum from 12 weeks to 24, 26, or 27 weeks of age. Weights were practically the same at these ages, although greater gains during the early part of the period were made on the higher protein. In the different trials the birds on the 16 per cent protein ration consumed approximately 10 to 20 per cent less feed than those on the 23 per cent protein ration.

Limited data obtained from feeding each ration to one lot of turkeys each on range and in confinement showed that on the 23 per cent protein ration the growth on range was practically the same as in confinement, while on the 16 per cent ration the males on ranges were the heavier throughout the growing period, and the females to 24 weeks of age. On both rations the birds on range consumed more feed, exclusive of that supplied by the range, than those in confinement.

In those experiments in which separate feed records were obtained, the females consumed only 64 to 80 per cent as much feed as the males. Due to their greater gains, however, the males used only 83 to 92 per cent as much feed per pound of gain as the females. There was no difference in mortality which could be attributed to the rations fed.

In two experiments with turkeys raised in complete confinement and one with turkeys on range, two all-mash rations, each containing 16 per cent protein, were fed ad libitum from 12 to 27, 28, or 30 weeks. One ration contained 2.5 per cent dried skim milk, while in the other the milk was replaced by 2.5 per cent soybean oil meal. In no case was there any significant difference in the comparable weights of either sex on the two rations, in the feed efficiency or in viability.—R. E. Roberts, Indiana Station Bul. 517.

Formula Feeds for Cattle and Sheep

By C. Bohstedt of University of Wisconsin Before Feed Manufacturers and Dealers at University of Minnesota Farm

In giving the various farm animals a rating as to their need for processed feed or formula feed, we will probably not give beef cattle and sheep a high priority in this respect. We would think first and foremost perhaps of poultry, pigs and dairy cattle, especially young calves. The reasons for minimizing the importance of formula feeds for beef cattle and sheep, including fattening steers and fattening lambs, is that because of being both herbivorous animals and ruminants they are nutritionally much better protected than are chickens, small growing pigs and very young calves.

However, in certain states or areas there is a rather lively interest in processed feeds for these two classes of livestock, especially for beef cattle. This would argue for a justification of such feeds.

Pellets Favored in Range Country

A worker in the Great Plains or range country looks kindly on the pelleted condition of supplement feed and under circumstances the inclusion of not merely molasses but also urea, whether in partial replacement of cottonseed meal, or together with hominy feed and molasses in simulating cottonseed meal, or as incorporated in grain equivalent feed itself.

Inclusion of Hormones

Suggestions have been made as to the possibility of including hormones or hormone-like substances in the nature of thiouracil or thyroprotein, although the livestock nutrition fraternity is far from unanimous on that subject, the preponderance of convictions as yet being against the more or less indiscriminate use of these hormones that slow down or speed up metabolism. They are as yet considered in their experimental phase.

Dehydrated Alfalfa

One of your group recently reported a good response on the part of fattening steers by having some dehydrated alfalfa meal in a pelleted molasses feed where the hay or other roughage in the ration was poor. The base of this particular feed was a high-fiber material which always seemingly is capable of absorbing very much more liquid molasses than is a low-fiber feed. This raises the question whether molasses is such a valuable or indispensable ingredient in cattle and sheep rations as to warrant the use of a very high fiber offal, or by-product material, having fiber contents considerably in excess of that of corn-cobs or cereal straw.

If a conclusion on the subject is to be drawn I suppose it is that in line with my opening statement there is less of a place, tonnage considered, for processed or formula feeds in rations for beef cattle and sheep, but that there are just enough opportunities here and there in the country for such feeds as to warrant the intelligent interest of all parties concerned—feed manufacturers and feed dealers, experiment station workers and stockmen.

Feeding Thiouracil to Swine and Steers

By A. B. Watts of Louisiana State University at Baton Rouge Nutrition Short Course

Work has been conducted at the New Jersey station on the feeding of thiouracil to growing swine. In this study hogs with well developed frames, but in thin condition, were fed thiouracil at levels of 0.15, 0.20 and 0.25% of the ration. The trial period was 45 days.

The results of this trial are given in the following table:

Ration fed	No. of animals	Gain in weight per hog	Feed consumed per 100 lb. gain	Average daily gain
Control	4	50	820	1.11
0.15	4	55	756	1.22
0.20	4	56	724	1.25
0.25	4	63	651	1.39
Control	10	47	723	1.23
0.25	10	61	524	1.60

Hogs receiving a ration containing 0.25% thiouracil consumed 27.5% less feed per 100 lb. of gain in body weight than the controls. The inclusion of 0.25% of thiouracil in the feed was more effective than either 0.15 or 0.20%.

Reduction in Feed Required

A study of a similar nature conducted at the Michigan station along similar lines gave somewhat different results. Chester White barrows averaging 162 lb., and Yorkshire pigs averaging 137 lb., were divided into two lots with equal number of each breed in each lot. All groups were fed for a period of 41 days. Thiouracil was incorporated into the ration at the rate of 0.1%. The most noticeable effect of feeding thiouracil was the reduction in both the total feed consumed and the feed required per pound of gain.

The thiouracil fed Chester Whites made 0.16 lb. less daily gain, but required 13.8% less feed per unit of gain than the controls. The Yorkshires receiving thiouracil made 0.09 lb. less daily gain on 18.8% less feed per unit of gain than the controls. The pigs of all groups receiving thiouracil began to show a tendency toward laziness by the end of the second week. They became very sluggish and slow to get up by the fourth week. These workers could find no significant differences in the carcasses attributable to the thiouracil treatment.

Effect on Yearling Steers

The effect of thiouracil on the growth and fattening of yearling steers has been investigated at Purdue. Yearling Hereford feeder steers averaging approximately 790 lb. were divided into five lots of 10 steers each and fed 154 days. The thiouracil was incorporated in soybean oil meal in quantities that would provide daily intakes of the drug of 2.0, 4.0 and 6.0 grams, respectively. The addition of thiouracil at these levels had no significant effect on the rate of growth of the steers as measured by total gain in weight.

The animals receiving two and four grams of thiouracil daily gained more rapidly and required slightly less feed per pound of gain than any other of the groups. There was a tendency for the dressing percentages of the lots fed thiouracil to be slightly higher than the controls, but this difference was not significant. There was no significant improvement in carcass quality in the groups receiving thiouracil, but there was a tendency for the thiouracil fed animal carcasses to have a higher finish.

State News

News items about new elevators—feed mills—field seed plants; new firms; changes in name and/or personnel; improvements contemplated or completed; fires; casualties; accidents; deaths, and all other news of interest to the trade, are cordially invited

ARKANSAS

McGehee, Ark.—The newly organized co-operative rice drying and storage association, which has been formed here recently with John Baxter of Dermott as president, has made plans to build a rice drying plant. It will have storage capacity of 400,000 bus. and drying capacity of between 500,000 and 600,000 bus. Early in December \$41,000 had been pledged as the initial investment for a building to cost \$300,000. It will be a subsidiary of the Arkansas Rice Growers Co-operative Ass'n of Stuttgart. —P.

CALIFORNIA

Los Angeles, Cal.—The California Hay, Grain & Feed Dealers Ass'n will hold its annual convention in Los Angeles, the dates to be announced later. R. A. Mayer of Cook-Boynton Co., has been appointed by J. E. Baker, president, as general convention chairman.

CANADA

Saskatoon, Sask.—A. M. Hush, local representative of the Quaker Oats Co., died unexpectedly recently. Mr. Hush was well known in the milling trade in Regina and Saskatoon.

Paincourt, Ont.—Three buildings of the King Grain & Seed Co. were razed by fire recently and thousands of bushels of grain were destroyed, the loss estimated at \$100,000. Combined capacity of the elevator and warehouse which burned was 35,000 bus.

St. John, N. B.—Amos J. McLaggan, vice-pres. and managing director of the St. John Milling Co., and Royal Mills, Fredericton, N. B., died unexpectedly recently at his summer home at Acamac, N. B. He had not been ill and had been attending regularly to his business at the St. John feed and flour plant. Mr. McLaggan had been active in business for the past 25 yrs. The St. John and Fredericton firms and plants are affiliated.—W. McN.

Halifax, N. S.—The rate per bushel for handling grain from box cars to steamers, at the National Harbors Board elevators at Halifax, N. S. has been increased from half cent to one cent. Free storage of grain in the elevators for ten days or less is being continued in effect. For overtime elevator work, there had been a straight \$25 per hour fee. Now, the charge is \$15 per hour for nights when time and a half is paid elevator employes, and \$30 for Sundays, when the pay rate is double. In 1939, the one cent rate per bushel for handling the grain, was cut in two in a plan to stimulate business. Increasing labor costs is the reason advanced for the restoration of the one cent rate, which prevails at the elevators in Montreal, Quebec City, Vancouver, B. C., and St. John, N. B., Halifax elevator executives stated.—W. McN.

Vancouver, B. C.—John W. Whittle, manager of the Midland Pacific Terminal, Ltd., was elected president of the Vancouver Merchants Exchange. He served as vice-president last year. Jas. K. Cavers, C. Gardner Johnson, Ltd., is vice-pres.; C. A. Bird, Dale & Co., second vice-pres.; M. Hunter, Bank of Montreal, treas. Herbert W. Cameron was returned as sec'y-manager with W. A. Sankey as assistant sec'y. Representing the grain trade on the board of trustees are: D. Roy Davis, Buckersfields, Ltd.; Vernon Lester, Hallet & Carey, Ltd.; Mr. Whittle and Philip Wolfe, James Richardson & Sons, Ltd.

WINNIPEG NOTES

Ogilvie Flour Mills plant was damaged by fire Dec. 3, the loss estimated at \$18,000.

On the occasion of his retirement from the staff of the Inspection Branch, Board of Grain Commissioners for Canada, a luncheon was tendered to Henry G. White by members of the staff recently. Mr. White has 42 years of service with the board. A presentation was made by F. S. Ludlam, chief grain inspector.

C. L. Turner has been appointed Winnipeg representative for Toronto Elevators, Ltd., and has taken over his new duties. Mr. Turner became connected with the grain trade here in 1935. In 1941 he joined the staff of the Toronto Elevators at Toronto. Returning from the service in 1945, he rejoined his company and served at Chatham and Sarnia before coming to Winnipeg.

Resolutions and petitions against the open market in coarse grains ignore the interests of the growers of oats and barley, the Winnipeg Grain Exchange in a telegram signed by its president, Stanley N. Jones, wired to acting Prime Minister Rt. Hon. L. S. St. Laurent. "The return of government control of feed grains can have no other effect than to lower the price the grower will receive," the telegram said in part.

ILLINOIS

Waterman, Ill.—Safe crackers broke open the safe at the Kauffman Feed Mill recently and escaped with \$100.

Manito, Ill.—Lawrence Thomas of Spring Lake has succeeded John Bell as manager of the Granger Elvtr. Co.'s elevator.

West Salem, Ill.—A new cleaner and dust tight motors are being installed in Campbell Grain & Seed Co.'s elevator.—H. H. H.

Alton, Ill.—J. R. Mulroy, son of M. F. Mulroy, who was manager of the Russell-Miller Milling Co.'s plant in Minot, N. D., several years ago and now vice-pres. of the company and located in Minneapolis, has been named manager of the firm's new mill recently opened here.

Peoria, Ill.—Joseph Harker, 97, former supervisor of weights of the Peoria Board of Trade, died in Charleston, Ill., Nov. 30. —P.

Litchfield, Ill.—Totally enclosed electrical equipment has been installed in the Farmers Elevator, replacing the old open motors. —H. H. H.

Macomb, Ill.—The Farmers Grain, Fuel & Supply Co.'s elevator was entered by vandals recently who tossed articles about the interior of the plant, leaving the place in disorder.

Green Valley, Ill.—The Green Valley village board has selected D. E. Bowlby, an employe of the Corn Products Co. for the last 25 years, as new mayor to fill a vacancy.—P.

Hillsboro, Ill.—Barnstable-Ware Feed & Supply Co. is contemplating installing a new dust accumulator to control loose dust from the hammer mill in its down-town feed store.—H. H. H.

Springfield, Ill.—J. C. Hackleman and W. L. Burlison of the University of Illinois department of agronomy were speakers Dec. 10 at the annual mid-winter conference of the Illinois Seed Dealers Ass'n here. —P.

Pekin, Ill.—Wm. Moore, employed by the A. J. Donahue Boiler Co., was injured in an 18-ft. fall while working at the Corn Products Refining Co.'s plant recently. He was working on a drier in the feed house at the time of the accident.

Cissna Park, Ill.—The Cissna Park Co-op. Grain & Coal Co. and the McMillan Feed Mills jointly sponsored an entertainment at the high school Dec. 10. The program included educational movies and talks dealing with correct feeding of livestock and poultry.

Newman, Ill.—Theodore Block has been transferred from Indianola where he was manager of the Federal-North Iowa Grain Co.'s elevator to the management of the company's local elevator. Roy Adams and Sam Ingram also have accepted positions at the local elevator.

Lacon, Ill.—Work has started on the Prairie Grain Co.'s concrete elevator to be built here for operation early next summer, the Eikenberry Const. Co. having the contract. It will be a duplicate of the grain company's elevator now nearing completion at Hennepin, also built by the Eikenberry Const. Co.

Jacksonville, Ill.—The Jackson Elvtr. Co., incorporated with an authorized capitalization of 300 shares of p. v. common stock \$100, by Lee Roy Jackson, Pauline B. Jackson, and Gerald Hagen. Another charter was issued to the Jackson Feed Mill with the same incorporators and same amount of stock.—P.

Trade Directory

IN ORGANIZED MARKETS ONLY MEMBERS of the LOCAL GRAIN EXCHANGE WILL BE LISTED HAVING YOUR NAME IN THIS DIRECTORY WILL INTRODUCE YOU TO MANY OLD AND NEW FIRMS DURING THE YEAR WHOM YOU DO NOT KNOW OR COULD NOT MEET IN ANY OTHER WAY. MANY NEW CONCERNS ARE LOOKING FOR CONNECTIONS, SEEKING AN OUTLET OR AN INLET, POSSIBLY IN YOUR AREA. IT IS CERTAIN THAT THEY TURN TO THIS RECOGNIZED DIRECTORY AND ACT UPON THE SUGGESTIONS IT GIVES THEM. THIS BUSINESS DIRECTORY LISTING SHOULD BE WORTH MANY TIMES ITS COST OF ONLY

\$25 PER YEAR FOR 24 INSERTIONS—OR \$15 PER LINE.

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GRAINS—FIELD SEEDS
PRODUCERS GRAIN CORP.*
FEDERAL BONDED WHE.
UHLMANN GRAIN COMPANY
MERCHANTS—BROKERS

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PAPE & GUENTHER
GRAIN—HAY BY TRUCK

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LEGG AND COMPANY
RECEIVERS—SHIPPERS
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GRAIN COMMISSION

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AMERICAN ELEV. & GR. DIV.*
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LEWIS GRAIN CORPORATION*
CONSIGNMENTS
J. G. McKILLEN, INC.*
CONSIGNMENTS
WOOD GRAIN CORPORATION*
CONSIGNMENTS—BROKERS

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FRASER-SMITH COMPANY*
GRAIN COMMISSION
WILDER GRAIN COMPANY*
GRAIN MERCHANTS

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GRAIN COMMISSION
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GRAIN—STOCKS—PROV.
NORRIS GRAIN COMPANY*
GRAIN MERCHANTS
QUAKER OATS COMPANY*
GRAIN MERCHANTS
UHLMANN GRAIN COMPANY*
GRAIN MERCHANTS

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GRAIN—FEED SERVICE
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THE CLEVELAND GRAIN CO.*
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EVANS GRAIN COMPANY*
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OPTG. ENID TERM. ELEV.
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ELEVATOR MERCHANTS
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GRAIN MERCHANTS
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SALINA TERMINAL ELEV. CO.*
MILLING WHEAT

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HENDERSON GRAIN & SEED CO.
FIELD SEEDS—GRAIN

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WHEAT-MILO SPECIALISTS
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GRAINS—SEEDS—FDSFTS.
UHLMANN ELEVATORS CO.*
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MILLING WHEAT

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GRAIN CO.* MERCHANDISING
KANSAS ELEVATOR COMPANY*
MILLING WHEAT, ETC.
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DOMESTIC—EXP. GRAIN
MENSENDIECK GRAIN CO.*
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MESERVEY-O'SULLIVAN C. CO.*
MERCHANTS—CONSIGNMENTS.
MID-CONTINENT GRAIN CO.*
WHEAT—KAFIR—BARLEY
NORRIS GRAIN COMPANY*
GRAIN MERCHANTS
SALINA TERMINAL ELEV. CO.*
GRAIN MERCHANTS

SCOUAR-BISHOP GRAIN CO.*
MERCHANTS—CONSIGNMTS.
SIMONDS-SHIELDS-THIS CO.*
GRAIN MERCHANTS
TEX-O-KAN FLOUR MILLS CO.
GRAIN MERCHANTS
UHLMANN GRAIN COMPANY*
GRAIN MERCHANTS

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C. L. GORDY COMPANY*
BROKERS—GRAINS—FEEDS

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RECEIVERS—SHIPPERS

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THOMSON BROTHERS
RECEIVERS—SHIPPERS

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McGREGOR MLC. & GRAIN CO.*
GRAIN—SEED—SEED OATS

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COMMISSION MERCHANTS
FRASER-SMITH COMPANY*
GRAIN COMMISSION
STRATTON GRAIN COMPANY*
GRAIN MERCHANTS

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GRAIN MERCHANTS
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GRAIN MERCHANTS

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GRAIN EXCHANGE MEMBERS
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BUTLER-WELSH GRAIN CO.*
3,000,000 BU. ELEV. CAP.
TAYLOR GRAIN COMPANY*
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UNITED GRAIN COMPANY*
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GRAIN—COMMISSION
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DANNEN MILLS*
MERCHANTS—CONSIGNMENTS.
GEIGER & GRAHAM GRAIN CO.*
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NANSON COMMISSION CO.*
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SERVICE GRAIN COMPANY*
COMMISSION MERCHANTS
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GRAIN—CONSIGNMENTS.

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GRAIN MERCHANTS

WINCHESTER, IND.
GOODRICH BROS. COMPANY*
CARLOT GRAIN—SEEDS

*Members Grain and Feed Dealers National Association

East St. Louis, Ill.—John A. Ellen, southeastern representative for the Ultra-Life Laboratories, Inc., died at his home in Rocky Mount, N. C., Nov. 30. Mr. Ellen had been associated with Ultra-Life Laboratories since 1942. Previous to that time he had spent many years in livestock work and feed manufacturing.

Mascoutah, Ill.—John Sherer, 65, seed dealer, died at his home here recently. He had been in failing health for some time, but bedfast only three days. He formerly was manager of the New Baden Milling Co. In recent years he had been associated with his son in operation of a grain cleaning service, and seed dealer.

Pekin, Ill.—The Pekin Farms Grain Co. at the annual meeting here Dec. 1 reported a profit of \$82,197.78 for 1947. A refund of \$66,549.50 of the earnings will be made to the patrons of the company. The dividend will be paid at the rate of 3.5c per bushel for grain delivered and a dividend of 8 per cent or \$3,188 for the stockholders.—P.

Alhambra, Ill.—The Alhambra Grain & Feed Co. at its annual meeting announced a net profit of \$157,000. The company has grown from a net worth of \$30,000 in 1927 to a present worth of \$265,000. The soybean processing has become the principal part of the business and this year the plant processed 256,000 bus. of beans, produced 6,400 tons of soybean meal and 33 tank cars of soybean oil.—P.

Peoria, Ill.—The Farmers Grain Dealers Ass'n will hold its annual convention Feb. 3 and 4, 1948, at the Pere Marquette Hotel. A program is being arranged which will include a general business session on the afternoon of Tuesday, Feb. 3, with reports of officers and committees. There will be the usual convention banquet that evening, with Dr. C. Oscar Johnson of St. Louis as guest speaker. A general discussion of current business topics will be held on Feb. 4, including soybean grading; transportation outlook for 1948 and the economic look for the immediate future. Authoritative speakers will discuss all subjects, Lawrence Farlow, sec'y, announced.

Streator, Ill.—Thirty grain dealers of this area enjoyed a steak and chicken dinner at Club Grove the evening of Dec. 3, and were later addressed by C. B. Clark of the Midwest Shippers Advisory Board on the subject of the box car shipping situation. The speaker held out hope for a better outlook in all-important situation in the near future. The meeting was the occasion of the regular monthly-get-together session of the grainmen, when problems and questions common to the trade were discussed, and a social evening enjoyed. L. W. Seago, manager of the Grand Ridge (Ill.) Co-operative Supply, is chairman of the group. Edwin S. Herron, Gilman, sec'y of Illinois Grain Dealers Ass'n, was among those present.

CHICAGO NOTES

John H. Scoville, who will mark 50 years as a member of the Board of Trade in 1948, was presented with flowers and gifts on the occasion of his 81st birthday recently.

Dana H. Eaton, 48, Chicago feed man, died of a heart attack recently while being moved to a hospital. He was an official of the New Century Co., a flour and feed distributing firm, and managed its feed department.

Walter M. Goldschmitt of the Continental Grain Co. and William H. Barker, Chicago, and Stuart C. McComb of Detroit, Mich., have been elected to membership in the Board of Trade.

Walter P. Quinn, with the animal feed department of Armour & Co. for 22 years, now is associated with E. G. James Co., provision and feed brokers at Chicago. He will be in charge of animal protein sales.

INDIANA

Peabody, Ind.—The Peabody Co-operative Co. will remodel its plant and install a corn drier.—A. E. L.

LaOtto, Ind.—The LaOtto Elvtr. Co., Inc., again has enlarged its plant with the addition of warehouse and driveway, size 22x62 ft.—A. E. L.

Muncie, Ind.—The G. & M. Feed & Seed Co. sponsored a dairy school held here recently, conducted by Wm. J. Bright of the General Mills, Inc.

Upland, Ind.—The Upland Grain Co. has installed a 60-h.p. Blue Streak Hammer Mill with crusher feeder and permanent magnet at its elevator.

Seymour, Ind.—The Jackson County Farm Bureau Co-operative Ass'n is planning to enlarge the loading platform facilities at its local plant.

East Enterprise, Ind.—Fire following an explosion destroyed Clell Martin's new feed mill with a loss estimated at about \$15,000. The blaze was caused by a gasoline explosion.

Fort Wayne, Ind.—Eli Dickey, well known among the grain and seed trade over many states and a former president of the Ohio Farmers Grain Dealers Ass'n, died at his home here Dec. 9.

Mt. Vernon, Ind.—Y. F. Combs, associated with the J. R. Short Milling Co., has been named manager of the Mt. Vernon Milling Co.'s plant, succeeding Nelson E. Kelley, who resigned recently.


Fort Wayne, Ind.—The Northeastern Indiana Hay & Grain Dealers Ass'n will hold its annual dinner meeting, featuring Ladies Night, on Jan. 12. There will be election of officers, and the Program Committee is arranging special entertainment.—A. E. L.

Brownstown, Ind.—The Jackson County Farm Bureau Co-operative Ass'n will build a 15,000-bu. combination grain elevator and feed store at the edge of town, to cost about \$60,000. It is expected to have the new project ready for operating this spring, Clifford Osterman, co-op. manager said.

Nappanee, Ind.—A sectional group of grain and feed men organized a grain association Dec. 1, at a meeting held here under auspices of the Indiana Grain & Feed Dealers Ass'n. P. E. Legge, Uniondale, president of the state association, was in attendance. Robt. J. Martin of New Paris had charge of the arrangements.

Roth Park, Ind.—The Tip-Wa Grain & Feed Dealers Ass'n, a group organization under auspices of the Indiana Grain & Feed Dealers Ass'n, has been effected, with the following as officers: Pres., D. W. Crutchfield of Yeoman; vice-pres., Woodson Whitman, Delphi; sec'y-treas., Fern L. Knochel of Buck Creek. A group of 20 enjoyed a turkey dinner preceding the business meeting. Fred K. Sale, sec'y of the state association, was present for the occasion.

OPTIMISM

tart the New Year right!—be an optimist. Things might be worse — and they may be. Many peoples of the world are now cold — have little clothing — not much to eat. We're warm — well clothed and well fed.

So — let's be optimistic — "have a heart" — willing to share — but — **not to impair our ability to meet any emergency. America must remain strong and powerful. And that alone** will hasten the economic and civic unity of nations.

But certain peoples **may need** a guiding hand to reach a **better** and a **higher** plane of living. It's up to us to show the way. The cost? — may be the price of an effort. Civilization **depends** on its **dependable** people. We must build a **greater** America and a **safer** world. Our motto — **The Stars and Stripes Forever.**

LOWELL HOIT & CO.

Huntington, Ind.—M. E. Putterbaugh and Harold Brown have leased the Collier Feed Mill, operating under the firm name of Riverside Feed & Supply.—A. E. L.

Lafayette, Ind.—An 8-weeks' Country Elevator Business Course will be offered in the coming year at the request of Indiana Grain & Feed Dealers Ass'n thru its sec'y, Fred K. Sale, if the industry will support it by registrations. The dates would be from Apr. 19 to and including June 12, 1948. A minimum registration of 30 students is necessary. Grain men are urged to respond at once as a decision must be made within the next few weeks, Sec'y Sale announced.

INDIANAPOLIS NOTES

New members recently enrolled by the Indiana Grain & Feed Dealers Ass'n include the Round Grove Grain Co., Brookston, R. 1; B. J. B. Grain Co., Toledo, O.; and Holland Pioneer Mills, Ohio City, O. —Fred K. Sale, sec'y.

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Members

KANSAS CITY

Board of Trade
Members

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TEX-O-KAN

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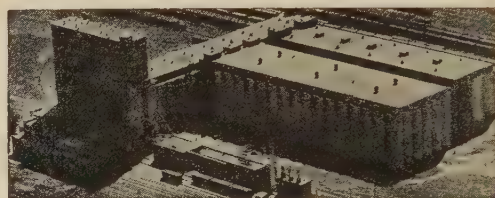
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CONSIGNMENTS—BROKERAGE
BUFFALO, 2, N. Y.

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on coarse grains, durums and protein milling wheats.*

Lewis Grain Corp.

A good firm to consign to
Corn—Oats—Soft Wheat—Barley
BUFFALO NEW YORK

The directors of the Indiana Grain & Feed Dealers held a called meeting here recently, many matters of the association coming up for discussion, it being decided the amount of dues for principal stations will remain at \$13 for 1948.

Grainmen planning to attend the annual convention of Indiana Grain & Feed Dealers Ass'n to be held here Jan. 19-20 are urged to make their hotel reservations at once. Convention headquarters will be the Claypool Hotel. The banquet will be held the night of the 19th in the Riley Room, affording ample room for all who wish to attend. The business meetings will be held in the Assembly Room on the 8th floor. An excellent program is being arranged for the occasion.—Fred K. Sale, sec'y.

IOWA

Mason City, Ia.—Harlan MacMillan, for 25 years wholesale feed and coal dealer here, died recently.

Atlantic, Ia.—Samuel Grant Campbell, 82, retired mill operator, died Dec. 11. He had been in failing health for several months.

Hartley, Ia.—Clifford Ostrom, Rock Island, Ill., has purchased the Hartley Feed Mill from Vern Donnenworth, possession to be given Jan. 1.

Farley, Ia.—Fred Kurt, grain and feed dealer, has purchased the Severn Building and will remodel it preparatory to moving his business there early next year.

Sioux City, Ia.—Purchase or construction of a terminal elevator at Sioux City was approved at the recent annual meeting of the Farmers Union Grain Terminal Ass'n at St. Paul, Minn.

Iowa Falls, Ia.—The Farmers Co-operative Elevator is building a feed mill. New grinding and mixing equipment has been purchased to replace the feed plant that burned a year ago.

Casey, Ia.—The Davenport Elvtr. Co. entertained 200 farmers of this area at a chicken dinner served in the Community Bldg. recently. After dinner guest speakers furnished the evening's program.

Shenandoah, Ia.—Dr. M. G. Smith, research director at the May Seed Co., showed colored films of "Life and Living in Mexico" at a recent meeting of the local Junior Chamber of Commerce chapter.

Stanton, Ia.—About \$24.00 petty cash and a radio and rifle were taken by burglars who forced an entrance into the Stanton Co-operative's elevator offices recently, Aaron Focht, manager, reported.

Burlington, Ia.—The new one-story feed warehouse of Wayne Bros. Grain Co. has been completed and opened for business. The 40 x 100 ft. wood and metal structure will be operated in connection with the company's elevator.

Emmetsburg, Ia.—Lyle Hubbard has reopened his Hubbard Seed Store in new permanent quarters in the building formerly occupied by the Emmetsburg Produce Co., he having purchased the building from the Sherman Clark estate.

Cedar Rapids, Ia.—Diamond V. Mills, Inc., has purchased the manufacturing plant and yeast feed business of the Otto Mfg. Co. Operations of the two houses have been consolidated and in the future will be located at 909 First Avenue S. W.

New Sharon, Ia.—More than 300 farmers attended the annual fish fry of the Lamis Elvtr. Co. at the high school gym recently, and consumed 325 lbs. of fish. L. W. Carr of Des Moines, Iowa-Missouri division sales manager for the Ralston Purina Co., addressed the gathering.

Central City, Ia.—The Farmers Co-operative Exchange has taken down its old grain elevator and the building housing the mill is being rearranged to permit easy access by trucks to the unloading and loading chutes. New machinery, including a mixer, burr mill, hammer mill, sheller and cracker will be installed at an estimated cost of \$10,000.

Mason City, Ia.—Cliff C. DuBois has resigned from the Calcium Carbonate Co., Chicago, to establish his own business here, to be known as Cliff C. DuBois & Co. The firm will represent manufacturers of feed ingredients. Mr. DuBois represented the Calcium Carbonate Co., for the past 13 years, travelling in Minnesota, Wisconsin, Iowa and part of the Dakotas.

KANSAS

Independence, Kan.—The Star Mill Co., incorporated with an authorized capitalization of \$100,000. William Vieth is resident agent.—P.

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COTTON—BUTTER
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KEN CLARK GRAIN CO.

ST. JOSEPH, MO.

CONSIGNMENTS

SERVICE FOR YOU

ORDER BUYING

BIDS TO ARRIVE

Overbrook, Kan.—The Farmers Union Elevator will build an addition to its elevator.

Lawrence, Kan.—The Lawrence Milling Co. had an electrical break-down of a 300-h.p. motor recently.

Corbin, Kan.—Foley & Cox will erect a custom grinding, treating and mixing plant opposite the Corbin Elevator.

Topeka, Kan.—The Kansas Grain, Feed & Seed Dealers Ass'n convention will be held here at the Hotel Kansan, May 21 and 22, O. E. Case, sec'y, announced.

Downs, Kan.—The Farmers Union Ass'n of Downs County plans to build three elevators, at Downs, Portis and Osborne. They are to be ready for next harvest.

Johnson, Kan.—Harold O. Wales, manager of the Johnson Co-operative Grain Co., has resigned and will go into the coal, grain and feed business at Cheyenne Wells, Colo., next spring.—C. N.

Anthony, Kan.—The Consolidated Flour Mills Co. recently purchased a house and will move it to a site near its elevator, to be remodeled into a modern home for its manager, W. L. Cook.

Burdett, Kan.—The new 150,000-bu. grain elevator of the Farmers Co-op. Elvtr. Co. opened for business recently. Although all machinery has not been installed, there is enough of the equipment on hand so that operations can be carried on. The elevator was built by Chalmers & Borton.—G. H.

Norton, Kan.—The N. L. Johnson Grain Co. has installed a truck scale with 34-ft. deck, and completed construction of a 35,000-bu. granary at its elevator. Neil Johnson is manager.—G. H.

Olivet, Kan.—Ralph and Merle Case have purchased the feed and grain business formerly operated by Bremer & Stanley of Lyndon, Kan., and are operating it under the name of Case & Son Grain Co.

Arkansas City, Kan.—Minor damage resulted from fire at the Arkansas City Flour Mills Co.'s plant recently when the blaze, started by friction in a rolling mill, was extinguished quickly by employees.

Asherville, Kan.—The Asherville Grain Co. will build a 150,000-bu. concrete grain elevator adjacent to its present plant, George Betz, manager, announced. The new elevator will be ready for the next harvest.

Syracuse, Kan.—The new 100,000-bu. elevator of the Syracuse Co-operative Ass'n is expected to be ready for operation by Jan. 1, Al Greenwood, manager, announced. Delay in getting machinery installed prevented its use for the maize harvest.—G. H.

Topeka, Kan.—Billy Cohee, 13, severely injured his left foot Dec. 8, when he was caught in an elevator at the Page Milling Co.'s plant. The boy, a son of William Cohee, employe of the mill, was carrying lunch to his father at the time of the accident.—P.

McPherson, Kan.—Fire destroyed five v-belts between the motor and the grain lift in the headhouse of the KBR Milling Co., here recently. No other damage resulted. A choke-up in an elevator leg generated enough belt friction to cause the belt to burn.—G. H.

Linn, Kan.—The Linn Co-op. Exchange recently installed a new scale indicator. The Company's new elevator was dedicated Nov. 15, with open house held during the afternoon. Hot coffee and fresh doughnuts were served all guests following an inspection of the elevator.

Newton, Kan.—A personal injury claim for \$16,957.50 was allowed Samuel Painter, Harvey County farm youth, against the Midland Flour Milling Co., in the district court here Nov. 29. Painter was injured while unloading wheat at the defendant's plant during harvest, when a lift was raised while he was trying to uncouple his two-wheeled trailer. The jury held that mill manager was negligent.—I. D. A.

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Hutchinson, Kan.—The following new members were enrolled recently in the Kansas Grain, Feed & Seed Dealers Ass'n: Stafford Grain & Supply Co., Stafford; John S. Notestine Co., Scott City; Burden Elevtr. Co., Burden, Kanorado Grain & Supply Co., Kanorado, Kan.—O. E. Case, sec'y.

Udall, Kan.—The Farmers Union Co-op. Ass'n's 16,000-bu. concrete elevator is practically completed and is expected to go into operation in December. The new elevator has all concrete pits and drives, and the structure is covered with corrugated aluminum. A clearing room will be added later. Tom Curliss had the contract.

Thayer, Kan.—George Bros. have purchased the Green Grain Co.'s elevator and business. George Bros. previously had announced plans to build an elevator. With consummation of the above deal the local grain business has been consolidated under one management. Mr. Green will devote his entire time to his implement business and farming activities.

Mayfield, Kan.—John Porter, operator of the Mayfield Grain Co., was painfully injured Dec. 3 when he was run over by a truck being backed up at the elevator by George Boatwright. He had stooped to look beneath the truck when Boatwright, unaware of his position, started to back it. The latter, believing he heard some one call, stopped the truck to investigate and found Porter. The latter had caught hold of the back of the truck to avoid being doubled under the machine. He suffered a severe cut in his head, a dislocated ankle and injured shoulder. He was removed to Wellington Hospital.—G. H.

KENTUCKY

Cloverport, Ky.—The Star Roller Mill was sold at auction Dec. 13.

Butler, Ky.—The Hardy Motor Sales are installing a Blue Streak Twin Spiral Feed Mixer.

Louisville, Ky.—The Warren County Mills have been incorporated here with a capital stock of \$20,000 and with the following incorporators: Clifford W. Doll, Martin J. Doll, and Vincent B. Sturgeon.—P.

Kuttawa, Ky.—Joe Altsheler and Dill Payne, doing business as the Kuttawa Grain Co., have opened their new 20,000-bu. grain elevator, located on the I. C. main line trackage. The elevator is equipped with modern grain handling machinery thruout. It will be operated by Gene McCollum, Jr., and Sam Dickinson.

MICHIGAN

Reed City, Mich.—Elgin Miller of Lansing is a new partner with Lawrence Churchill in the operation of the Churchill Seed Co. Clarence A. Churchill, father of Lawrence, who formed the company this fall with his son, has gone to Arizona until next spring. Mr. Miller was a partner with the elder Mr. Churchill in the seed business at Carson City for 8 years. Since his discharge from service in World War II he has been employed by the Roscoe Carl Seed Co. in Lansing.

MINNESOTA

Dennison, Minn.—Even Halverson has moved his produce and feed business into his new building.

Hanska, Minn.—Fred A. Bjornberg has moved his feed store business into his new building on Washington Ave.

Tracy, Minn.—The Western Grainmen's Ass'n held its regular monthly meeting here Nov. 12, in the Civic Building. G. M. Thompson, Montevideo, president of the organization, acted as chairman. W. D. Fleming, sec'y-treas. of the Northwest Retail Feed Ass'n, discussed the Fair Labor Standards Act. The matter of bringing storage rates for grain by country elevators more nearly in line with existing grain prices was brought up, during the meeting, and after some discussion George Pedersen of Ivanhoe suggested that the Supervisor of Local

Grain Warehouses and the members of the Minnesota Railroad & Warehouse Commission be invited to the next meeting to present their views on this matter. Members voted to dispense with the December meeting and the next meeting will be held on Jan. 13, with the place to be set by the officers. Hosts of the meeting were: Hallet & Carey Co., Northwestern Salt Co., Mullin & Dillon Co., Benson-Quinn Co., Grain & Feed Review, Dinham-Seim Co. and McCarthy Bros. Co. (all of Minneapolis); Al Miller Elevator, Balaton; Swoffer & Swoffer and the Masterson Elevator, both of Walnut Grove; Farmers Elevtr. Co., Lamberton; Farmers Elevtr. Co., Garvin, and Farmers Elevtr. Co., Tracy.

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Dawson, Minn.—The Farmers Co-op. Elevtr. Co. has completed construction of its 95,000-bu. elevator and office building.

St. Paul, Minn.—The Farmers Union Grain Terminal Ass'n will build a river terminal elevator here for handling barley.

St. Paul, Minn.—Mr. and Mrs. Wm. Frieze have reopened their feed store, operated for the past three years by another feed dealer. They plan to build later a modern building near their present site.

Argyle, Minn.—The Argyle Co-operative Warehouse Ass'n is building a large dust and screenings bin adjacent to the main plant, which will provide storage space for residue from its seed cleaning machine. The elevator also was covered with sheet metal.

Lake Park, Minn.—Martin (Steve) Hviding, manager of the Peavey Elevator, left for Fargo this month where he will be in charge of sales and service for the company for several months. Arnold Peterson of Minneapolis will manage the local elevator during Hviding's absence.

Redwood Falls, Minn.—The Farmers Union Livestock Commission Co., St. Paul, has purchased the Central By-Products Co. and its 10 branch plants in Minnesota and Iowa. Marvin Evanson, general manager of the commission firm, said the price for the grease and fats producing plants was \$1,800,000. Possession will be given Jan. 2. There will be no change in personnel of the plants under the new ownership.—M.

Thief River Falls, Minn.—The Farmers Co-op. Grain & Seed Ass'n plans to enlarge its grain storage facilities from their present capacity of 55,000 bus. During the past year the elevator handled approximately 300,000 bus. of grain.

MINNEAPOLIS NOTES

Benj. Andrews, 61, manager of the grain department for Piper, Jaffray & Hopwood for 27 years, died Dec. 8.

The International Stock Food Co., Inc., has been incorporated, to manufacture, mill and generally deal in flour, cereals and feeds of all kinds; incorporators are: A. L. Stanchfield, E. R. Stanchfield and R. A. Stanchfield, all of Minneapolis.

The importance of futures trading in maintaining stable grain prices was stressed by Dan McLaughlin, assistant sec'y of the Minneapolis Grain Exchange, at a meeting of the Business Forum recently. Mr. McLaughlin explained the economic functions of the grain speculator.—P.

Elmer Ziegenhagen, former agricultural instructor in the Worthington (Minn.) schools, has been appointed to the post of service director of the Archer-Daniels-Midland Co. He will head the promotional and educational work in the feed department, providing educational work of the feed department.

F. H. Peavey & Co. and Van Dusen-Harrington Co. have awarded a college scholarship to Dwayne Kettering, a junior agronomy student at South Dakota State College. Peavey scholarship grants also have been made to students at North Dakota Agricultural College and the University of Minnesota. Nominations for the awards have not been completed.

The Northwest Feed Manufacturers Ass'n will hold a social session at Hotel Radisson Dec. 15. Cocktails will be served at 5:45 p.m. in the Italian Room, followed by dinner at 7 p.m. in the Gold Room. A program of general interest to the entire membership has been arranged for the occasion, but the greater part of the evening will be given over to having an impromptu good time, Wayne Fish, sec'y, announced.

MISSOURI

East Prairie, Mo.—The Story Feed & Seed Co. has been incorporated, headed by E. A. Story and A. L. Story, to operate mills, elevator and a feed business.

St. Louis, Mo.—Clyde R. Cunningham recently resigned his position with the Corneli Seed Co. to again become associated with the Missouri Extension Service.

Unionville, Mo.—The Hibbs Feed & Grist Mill has been purchased by Keith L. Burns and Lawrence Smith. They will handle a complete line of commercial feeds.—P.

St. Joseph, Mo.—Fred Banker, 74, for many years associated with the Quaker Oats Company here, died Dec. 9, at the home of a daughter in Kansas City.—P.

Sikeston, Mo.—Two flour mills of the Scott County Milling Co. were among the plants that recently had to shut down temporarily because of limited capacity at the municipal light plant.—P.

De Soto, Mo.—Chas. J. Davidson, for many years operator of the Davidson Feed & Fuel Co., which he sold about a year ago to Ward Tierney, died here, Dec. 1. He was a former mayor of DeSoto.—P.



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Marshall, Mo.—The Midland Feed Mill has opened a retail feed store at Eastwood and Odell Sts. under the management of Chas. R. Larue. Henceforth all detail sales will be made here instead of at the mill.

St. Marys, Mo.—Operations of the St. Marys Flour Mill's plant has been resumed on a full-time basis following completion of a complete overhauling, in progress for the past several months. An entirely new cleaning system was installed, all of the cleaning equipment being removed to a separate building adjoining the main mill. Flour and feed bins were constructed and a cereal and baking laboratory comprises another addition. With the changes and additions the capacity of the mill has been stepped up to 2,200 cwts. daily. The property is owned and operated by the Lathrop Grain Corp., Kansas City, Mo.

KANSAS CITY NOTES

Kansas City grain market quotations now are being broadcast daily over radio station KFRM, Concordia, Kan., operating on a frequency of 550 kilocycles. The grain market quotation schedule is 9:50 and 11:05 a.m. and 12:35 and 1:30 p.m.

Directors of the Grain Clearing Co. of the Kansas City Board of Trade, three to be elected, will be chosen from the following: W. B. Lincoln, H. H. Cate, R. A. Wood, E. R. Jessen, J. C. Brackett, John Dunn, M. H. McGreevey and L. S. Myers. The election will be held Jan. 6.

Elmo F. Merrill, present first vice-pres., and Jas. K. Christopher were named by the nominating committee as candidates for president of the Kansas City Board of Trade during 1948, but Mr. Christopher withdrew, assuring Mr. Merrill's election. Edmund Marshall and A. H. Furrman are candidates for first vice-pres., election to this office being necessary because Mr. Marshall served during the past year by appointment upon the resignation of B. J. O'Dowd. Ordinarily the second vice-pres. automatically succeeds to the first vice-presidency. Candidates for first vice-pres. are S. B. Gregg and G. F. Hiltz. Candidates for directors, six to be elected, are Gustav Eisemann, E. G. Wallingford, R. D. Crawford, E. E. Klecan, C. B. Dreyer, R. H. Uhlmann, R. H. Sturtevant, Hearne Christopher, R. A. Larson, H. J. Smith, G. N. Davis, F. J. Fitzpatrick and W. R. Smith, the latter by members' petition. The arbitration committee of five will be chosen from the following nominees: S. G. Cronin, E. C. Meservey, Jr., D. E. Walter, T. G. Stephenson, H. A. Merrill, John Blowers, F. J. Fitzpatrick, Otto Pecha, E. L. Love and E. H. Reed. The election will be held Jan. 6.

MONTANA

Great Falls, Mont.—Paul R. Trigg has been elected executive vice-pres. of the Montana Flour Mills Co. He formerly was treasurer of the company. Chas. R. McClave was re-elected pres.; Chas. G. McClave, treas.; W. N. Smith and Al Stroben, vice-pres.; Rodney J. Anderson, sec'y.

NEBRASKA

Elba, Neb.—The Farmers Grain & Supply Co. has installed a new 50-ton scale.

Lincoln, Neb.—The Nebraska Crop Improvement Ass'n will hold its annual business meeting Feb. 3.

Elm Creek, Neb.—Tom Cummings, Cozad, has succeeded C. S. Richardson as manager of the Elm Creek Alfalfa Mill.

Silver Creek, Neb.—The Farmers Elevator has installed a new Fairbanks Scale, 50 tons, with 60-ft. deck.

Osmond, Neb.—August Dibbert, employee of Boyd Edwards' Osmond Seed, Feed & Grain Co., recently underwent a major abdominal operation.

Fordyce, Neb.—The A. P. Meyers Co. has consolidated its two elevators here and installed new equipment. The unit has a storage capacity of 28,000 bus. Included in new equipment installed is a 34-ft. deck, 30-ton all steel scale; overhead drives and cups and belts with an elevating capacity of 1,500 bus. per hour. B. J. Luken is manager.

Omaha, Neb.—Agents for the Pioneer Hybrid Seed Corn Co. enjoyed the company's annual banquet Dec. 11 at the Rome Hotel.

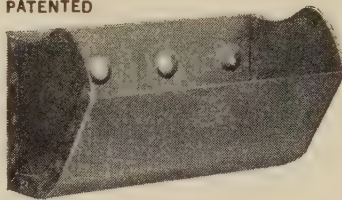
Falls City, Neb.—Some Richardson County elevator operators have proposed an embargo on the selling of corn for feeding purposes outside the county. They said that from one to three Missouri truckers a day visit every elevator in the county for grain for cattle in Missouri feed lots.

Valley, Neb.—The Nebraska Feed Products Co.'s alfalfa mill east of here on Highway 275 burned Nov. 25, the loss estimated at \$7,000. Most of the damage was to feed and machinery used to sack and pile feed, rather than to the building. A bulldozer was used to push the burning feed out of the mill.



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Seward, Neb.—The Campbell Seed House is building an addition to its plant which will contain an elevator leg and other equipment.

DeWitt, Neb.—W. W. Barmby has let a contract to Har-Welch for construction of a 30,000-bu. cribbed elevator, to be built early in the spring. A 50-ton Fairbanks Scale has been purchased.

Sidney, Neb.—The Nebraska state wheat show will be held here Jan. 10, and is expected to attract several hundred top quality samples of commercial wheat and certified seed. The show is open to any Nebraska wheat grower. An entry consists of one quart of hard red winter wheat or spring wheat grown in 1947. The top 15 samples will be entered in the state milling and baking contest in February.

Falls City, Neb.—Louis Ebel will build a 40 x 120 ft. one-story tile building at 14th and Crook Sts., the future home of his Ebel Seed Co. Construction will start at once and Mr. Ebel expects to have the structure ready for occupancy next spring. It will house a modern seed plant, a hatchery, retail sales room and a laboratory. The hatchery and laboratory will be innovations in the business. A warehouse will be built next year.

Steele City, Neb.—Lawrence Weigel, manager of the Baumfalk Grain & Milling Co., who was charged with the embezzlement of \$245.04, entered a plea of not guilty in county court and demanded a preliminary hearing which was set for Dec. 19. He was released on bond.

Chadron, Neb.—The council's water committee is studying ways to improve water facilities in the industrial area on West First St. in answer to a request by the Chadron Milling Co. The company opened its new feed plant Dec. 13 and invited members of the council to be present for the occasion.

Omaha, Neb.—With the recent admission to membership in the Omaha Grain Exchange of Chas. H. Holmquist, four generations of the Holmquist family now are engaged in the management of the local Holmquist Elvtr. Co. O. Holmquist and J. W. Holmquist, father and son, started in the grain business at Oakland, Neb., in 1890. The firm moved to Omaha in 1902, operating under the name, Merriam & Holmquist, until 1910. J. W. Holmquist was a charter member of the Omaha Grain Exchange, and is still active with the assistance of his sons, Bernie O., and J. W., Jr., and Bernie's son, Chas. H. Holmquist.

Friend, Neb.—Don Ferguson has succeeded Merle Heinzman as manager of the Farmers Union Co-op. Co's elevator. Mr. Heinzman resigned several months ago, effective at the close of the company's fiscal year, after 11 years' of successful operation. Mr. Ferguson has been associated with Mr. Heinzman at the elevator for 10 years except for the time spent in the U. S. army, and is fully acquainted with the elevator and feed business. Mr. Heinzman plans to take a prolonged rest.

Kimball, Neb.—The Cortney-Olsen Grain Co. will build a feed mill east of its elevator. The plant will embody a process of steam rolling oats and barley, then mixing it with molasses to make livestock feed. The new building will be 24 x 70 ft. in size, with a storage elevator of 7,000 bus. capacity, and will be independent as a unit from the present grain elevator. There will also be a warehouse, with storage capacity for 6 carloads of processed feed, and room for a boiler and steam rollers. The building will be of frame construction with sheet metal siding; estimated cost, \$18,000.

NEW ENGLAND

North Troy, Vt.—The large grain store owned by Pierre Cadieux burned by fire recently, the loss estimated at \$100,000, partially covered by insurance.

New Haven, Conn.—Arthur Bryan Clark, 67, one of the principal founders of the Associated Seed Growers, Inc., died Dec. 3, at his winter home in Delray, Fla. Mr. Clark was president of the American Seed Trade Ass'n for the year 1923-24. In 1927 he was the principal figure in the merger of the John H. Allen Seed Co., the Everett B. Clark Seed Co., and N. B. Keeney & Son, all seed growing firms of high repute.

NEW YORK

Buffalo, N. Y.—Samuel L. and Crystal G. Hassell have registered the Samuel Hassell Grain & Ingredients, Chamber of Commerce Bldg., as a partnership.—T.

Buffalo, N. Y.—The Corn Exchange will hold its annual Christmas party for all branches of the flour, feed and grain industry, Dec. 20, at 1 p.m. A limit of 300 persons has been placed on the attendance by a committee in charge of the affair, consisting of the following: Chairman, George DuRant, Geo. Kaiser, Fred Haller, Frank Smith, Ralph Popp.

Jamestown, N. Y.—Timely discovery of fire in a 30-ton bin of distillers' grain by workmen at the D. H. Grandin Milling Co.'s plant recently, and prompt action by employees and firemen averted threat of a major blaze. Company workmen at once started unloading the bin while firemen remained on the scene. The blaze was started by spontaneous combustion.—G. T.

NORTH DAKOTA

Sherwood, N. D.—The Farmers Union Elvtr. Co. held open house upon completion of its new concrete elevator recently.

Grand Forks, N. D.—The Farmers Union Grain Terminal Ass'n will build an elevator here, a part of its authorized \$10,000,000 program.

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OHIO

Bethel, O.—Virgil Camery is installing a new Blue Streak Corn Cutter and Grader at his place of business.

Summerfield, O.—The Monroe Feed Mill has opened a branch store here with Paul Drum, associated in the business with Raymond Meeks, in charge.

Upper Sandusky, O.—Thieves broke into the office of the Walton & Meyers Elevator the night of Dec. 3, stealing a calculating machine, a typewriter and an adding machine.

Circleville, O.—An overheated motor in a hammer mill at the feed mill of J. W. Eshelman & Sons started a fire recently that caused about \$400 damage to the motor and belts.

Circleville, O.—Two hundred employees of the Ralston Purina Co. here at their annual dinner Dec. 19 substituted cereal for the traditional turkey. Money saved will be used for relief.—P.

Upper Sandusky, O.—A larger fireproof structure is to replace the grain elevator of Walton & Myers, recently destroyed by fire. The loss was estimated at \$300,000 and 80,000 bushels of wheat, soybeans, and corn were destroyed.—P.

Warren, O.—C. H. Chinnock and son, Chas. B. Chinnock, have purchased the Greenwood Feed Co. from Roswell Greenwood. They will continue to operate the store at the same address under the name of C. H. Chinnock & Son Feed Co.

Amanda, O.—The J. I. Gates Milling Co., owner of the new firm of the recently merged Amanda Grain & Feed Co., and the Pleasant Corners Grain & Feed Co., plans to continue operations of both elevators as in the past. E. F. Reynolds is a partner and manager of the business.

Port William, O.—A new \$25,000 fireproof 16,000-bu. grain elevator is expected to be ready for use by the Port Feed Mill about Jan. 4, the anniversary of the fire which destroyed the former elevator last year. Most of the exterior construction of the house is completed and machinery is being installed.—P.

Chillicothe, O.—A hot bearing in the fan housing in a corn drier about 40 ft. up in the Standard Elvtr. Co's elevator started a fire about 3 a.m. Nov. 22, but timely discovery of the blaze by Carey Collins, merchant patrolman, who summoned firemen prevented a heavy loss. Firemen went aloft on their 65 ft. aerial and extinguished the blaze with only slight damage resulting.

Columbus, O.—New members recently enrolled in the Ohio Grain, Mill & Feed Dealers Ass'n, Inc., include the following: Alpha Seed & Grain Co., Alpha; Ohio Mineral Co., Zanesville; Merchants Creamery Co., Inc., Cincinnati; North Baltimore Grain Ass'n, North Baltimore; Odenweller Milling Co., Ottoville; LaFayette Co-operative Co., LaFayette; X-Cel Feed Mill & Farm Supply, Rosewood.—C. V. Thomas, sec'y.

OKLAHOMA

Okeene, Okla.—The Farmers Union Exchange will erect a concrete elevator on the Frisco track.

Clyde (Medford p.o.), Okla.—The Clyde Co-op. Ass'n is building a concrete elevator, Chalmers & Borton having the contract.

Marland, Okla.—The Bliss Co-op. Elvtr. Co. recently completed construction of a frame iron-clad seed cleaning and treating plant.

Hobart, Okla.—Claude Ferrell and E. M. Watkins have purchased the Waterbury Grain Co. and will take possession of the business Jan. 1.

Cherokee, Okla.—The Farmers Co-operative Elvtr. Ass'n recently completed construction of a concrete block cleaning and seed treating plant.

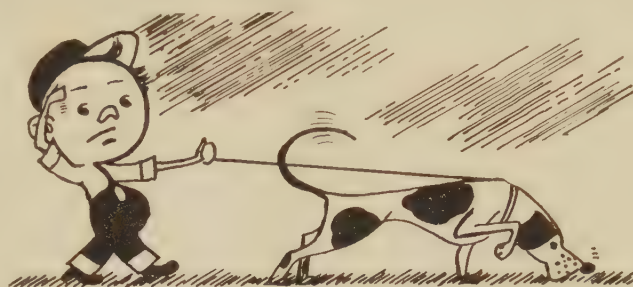
Yukon, Okla.—Henry A. Kelly, 47, assistant sec'y, in charge of grain buying, Yukon Mill & Grain Co., Inc., died unexpectedly of a heart attack at his home Dec. 13.

Dacoma, Okla.—The Farmers Elvtr. & Mill Co. is erecting a group of concrete tanks adjacent to its concrete elevator. A. F. Roberts is the builder.

Muskogee, Okla.—John T. Purcell and Jack Walker, who have incorporated the W. & P. Milling Co., will build a milling plant here for poultry feed.

PACIFIC NORTHWEST

Soda Springs, Ida.—The Farmers Grain Corp., Ogden, Utah, will build a 100,000-bu. grain storage elevator which will provide storage space for grain near its source. The unit will be made up of steel tanks and a concrete foundation. The Co-operative operates terminal elevators at Ogden.



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Because, to quote just one of scores of satisfied customers, "you'll hunt a long, l-o-n-g time before you find a more select line of quality Grain and Seed Testing Equipment and Supplies than the one tucked away between the cover pages of the Burrows Catalog." Yes, and every item listed is tested, approved and guaranteed by Burrows.

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MOTHER NATURE KNEW
WHAT SHE WAS DOING
WHEN SHE USED SO
MANY CURVES

How many things did she create without curves? Name 'em! Had she designed an elevator bucket chances are she would have used a *Logarithmic* curve, just as we have . . . for it's in keeping with natural laws that assure maximum elevating capacity. Yes, the

CALUMET

SUPER
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ELEVATOR

CUP

is a "natural" for loading, elevating and discharging super capacity loads. Results prove beyond question it's the "Curve that Counts."

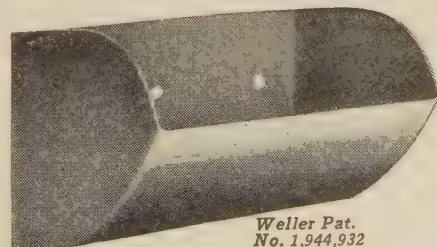
Mr. R. H. Lamis voices the experience of scores of elevator operators when he says: "The Calumet Cup tripled the capacity of the buckets we were previously using."

ASK YOUR JOBBER, or send for Form 35 and learn how much greater guaranteed capacity you can get from your elevator legs.

B. I. WELLER CO.

327 S. La Salle St.

Chicago 4, Ill.



Portland, Ore. Dec. 12—The downstream wheat movement by barge on the Columbia river through Bonneville locks was 10,893 tons. It was below October, which had 13,558 tons.—F. H.

Kent, Wash.—Shaffer Bros. Feed Co. lost one of its warehouses here by fire recently. The building was filled with hay and fertilizers. Loss is estimated at \$5,000, with partial insurance.—F. H.

Eugene, Ore.—The Eugene Mill & Elevator Co.'s plant, destroyed in a fire recently, will not be rebuilt according to Art Bushman. Insurance covered inventory losses, but not replacement of the mill.—F. H.

Portland, Ore.—Herbert N. Penson, veteran local grain man currently associated with the Continental Grain Co, died unexpectedly recently. He previously was employed by Strauss & Co. and the Northern Flour Mills.

Seattle, Wash.—Representatives of Northwest poultry and dairy producers met with Sec'y of Agriculture Clinton P. Anderson in Seattle recently, and requested that the government reduce its grain export program to avert a shortage of feed for the region's herds and flocks next spring and summer. Some have expressed fears that the government already has purchased enough wheat to create a deficit.—F. H.

Colfax, Wash.—David Edmund Stephens, 68, one of the Northwest's leading grain authorities, died here of a heart attack. He had been with the Dept. of Agr. 38 years, 25 of which were spent at Moro, Ore. For the past four years he had been stationed at Washington State College. He was credited with development of Federation, Golden, Rio, Oro and Rex wheat and Markton smut-resistant oats.—F. H.

Bend, Ore.—George I. Short, a resident of Oregon for more than 30 years, has been named manager of the Mid-Oregon Farmers' Warehouse & Supply Co., which is being erected here at a cost of \$200,000. An experienced feed and seed man, Mr. Short formerly was assistant manager of the Deschutes Grain & Feed Co., in Redmond.—F. H.

Spokane, Wash.—Federal carload inspections of wheat at the Spokane terminal during November totaled 1,331, bringing the season to date to 7,502 compared with 8,490. Pasco was second in the volume of inspections with 1,123 and 5,577 for the longer period. Portland last month had 1,107 carloads inspected and since the harvest, 5,568. Inspections of Montana wheat in the Pacific Northwest totaled 342 cars with the season's total 1,470.—F. H.

Portland, Ore.—Walter John Burns, 92, native of Brechin, Scotland, who for many years was associated with Balfour Guthrie & Co., died at his home here Dec. 12, following a year's illness. He entered the firm of Williamson & Co. in London at age, 21, and was sent to Balfour, Guthrie & Co., in San Francisco, a few years later. In 1921 he opened a Portland office for the firm, remaining as head of it until 1922 when he moved to San Francisco to become the second president of Balfour, Guthrie & Co., Ltd., which had then grown to become one of the coast's largest grain firms with offices in Seattle, Portland, Tacoma and San Francisco, and included a large flour and milling operation. He retired in 1928.—F. H.

PENNSYLVANIA

Erie, Pa.—Harry G. Lampman, Sr., feed salesman for nearly 30 years for the Maritime Milling Co., Buffalo, Vitality Mills, Chicago, and Kasco Mills, Toledo, died here recently following a stroke.

SOUTH DAKOTA

White, S. D.—Gerd Albert Null, 66, manager of the Farmers Elevator and long time grain dealer here, died Nov. 21 after a long illness.

Belle Fourche, S. D.—The Farmers-Ranchers Co-operative, newly organized group of the Spearfish and Belle Fourche vicinity, will ask for bids within a short time for construction of a grain elevator here. Directors of the Co-operative will meet with farmers and ranchers at Spearfish, Jan. 5.

SOUTHEAST

Atlanta, Ga.—Robert L. Feldman, 72, grain and sack dealer, died at his home here, Dec. 2.—P.

Columbia, S. C.—L. H. Mixon, Jr., of Charleston was elected president of the South Carolina Seed Men's Ass'n at its closing session here Dec. 10. George J. Wilds of Hartsville, retiring president, was elected vice-pres., and Marion P. Shuler was re-elected sec'y and treasurer. An informal reception on Dec. 9 was followed by a banquet with Harold S. Reeves of Charleston as the after-dinner speaker.—P.

Dover, Del.—The Southern States Dover Co-operative Ass'n has let a contract at \$55,527.88 for the construction of a warehouse to include a large display room and facilities for handling grain and providing a complete custom feed service. The new structure will replace the present quarters on Railroad Ave. Equipment and facilities will include a hammer mill, feed mixer, molasses mixer for preparing dairy feeds, corn sheller, corn cracker and grader, grain loading equipment and storage for 6,000 bus. of grain. The association last year performed \$489,546 worth of purchasing and marketing services for members and other patrons.—P.

TENNESSEE

Martin, Tenn.—The Southern Milling Co., has installed new and modern crushing machinery at its local plant, and will do crushing for farmers and dairy men.—P.

Nashville, Tenn.—The feed store owned by Newman Cheek was destroyed by fire recently with a loss estimate at \$40,000, insured. Defective wiring near the roof started the blaze.

TEXAS

La Grange, Tex.—The Polly Feed & Milling Co.'s plant was destroyed by fire Nov. 25. The loss was estimated at \$25,000; insured.

Bishop, Tex.—The Big State Grain Co. has been incorporated with \$10,000 capital stock, by H. F. Pierce, Alta E. Pierce and Ernestine Theis.—H. N.

Fort Worth, Tex.—The Triangle Grain Co. has been incorporated by Jack N. Greenman, Harry H. Hitch and H. B. Lindley; capital stock, \$6,000.—H. N.

WISCONSIN

Rio Creek, Wis.—Van Dam & Sons will build a feed mill and warehouse.

Augusta, Wis.—The Farmers Union Feed Mill opened in its new location Nov. 10, and is now grinding and mixing feed.

Hilbert, Wis.—Krueger Bros., Forest Junction, Wis., will construct a grain elevator and warehouse, metal on frame, over all size, 36 x 60 ft., reinforced construction and concrete block foundation.

Superior, Wis.—The Farmers Union Grain Terminal Ass'n plans doubling the elevator capacity of its local terminal elevator, the improvement authorized as part of the expansion program announced at the association's recent annual meeting at St. Paul, Minn.

Augusta, Wis.—The Augusta Farmers Union has opened its new feed mill for business. T. M. Jacobson, manager of the mill, invited members of the co-operative and others interested in the project, to visit the plant and watch the equipment in operation.

Goodrich Bros. Co. Stock Sold

The common stock of Goodrich Bros. Co., Inc., which owns 24 grain elevators in northern Indiana, with headquarters at Winchester, was sold Dec. 12 to Samuel R. Harrell and associates of Indianapolis for \$1,800,000. Operation continues under its present name, with no change in officers or directors. The firm also has a farm seed business, a commercial farm feed mill and a farm supply division.

Mr. Harrell is president of Acme-Goodrich, Inc., a firm which operates five grain elevators, and he stated these elevators will be added to those of Goodrich Bros. Co. The grain elevators will be operated as farm service stores, Mr. Harrell said.

Financing for the purchase was supplied by Acme-Goodrich, Inc., and by the John Hancock Mutual Life Ins. Co.

Last Storage Boat at Buffalo

The last boat to arrive in Buffalo's winter storage fleet, Dec. 12, was the Harry Yates, pictured on our front cover of Nov. 26, with 268,465 bus. of export wheat.—T.

Wheat Thieves Busy

Wheat robbers are busy again. Reports from Oklahoma state that in the last 30 days more than \$30,000 worth of grain in nine of the states western counties has been hi-jacked. Texas also has reported stolen grain. The Farmer's Grain Co. of Tulia, Tex. lost more than 60,000 pounds of No. 2 milo on Oct. 18.

Weevils in Grain

Some grain arriving at Fort Worth is grading "Weevily," and you must realize that this high priced grain makes weevil dockage very expensive, and you can well afford to buy a lot of fumigants when you consider ½c per bu. discount or perhaps 1c per bu. discount in \$3.00 wheat, so let me urge you to fumigate your grain if there are any weevils in it, and be sure to examine all empty boxcars for weevils before loading, as this will save you money.—G. E. Blewett, sec'y, Texas Grain & Feed Dealers Ass'n.

Wanted—For Sale

The rate for advertisements in this department is 40 cents per type line each insertion—80 cents in bold-face caps

ELEVATOR WANTED

WANTED TO BUY—Grain Elevator, 20,000 to 75,000 bushel capacity, good condition, preferably located in Southwestern Indiana or Southeastern Illinois. Address 99X14, Grain & Feed Journals, Chicago 4, Ill.

WANTED—20,000 to 75,000 bushel elevator in southeastern Illinois or southwestern Indiana in good corn territory. Address 99Y16, Grain & Feed Journals, Chicago 4, Ill.

ELEVATOR FOR SALE

FOR SALE—Elevator 21,000 bu. capacity. Balloon type construction. 34' Soweigh truck scale, installed 1941. New 24 x 40 warehouse. New office, new Allen Wales adding machine. Steinlite moisture tester, combination triplicating and cash drawer sales machine. New traveling overhead truck hoist. New overhead drive, new high speed leg, Richardson automatic shipping scale. Corrugated steel on site for covering elevator. Modern house available with elevator, rock wool insulated, electric hot water heater, water softener, automatic laundry (Launderall), new inlaid and all steel sink and cabinet set, three lots. Have to move to the southwest for family's health. Send inquiries to Kamrar Elevator Co., Kamrar, Ia., Phone No. 1 or 52 Kamrar, Iowa.

ELEVATORS FOR SALE—Have a number of good going country elevators for sale in Ohio, Indiana, or Illinois. Some will pay for themselves in one year good management. Owned mostly by older men wanting to retire. If you want to buy, see or write us your needs. Availability of most our plants not publicly known. Mid-West Business Exchange, 201½ North Michigan Street, Plymouth, Ind.

FOR SALE—25,000 bu. Elevator with built on feed or storage room. All equipment is in A-1 condition. Located in good grain section of Illinois. Has shipping facilities of two railroads. For complete details address: 99V7, Grain & Feed Journals, Chicago 4, Illinois.

FOR SALE—Two Good Elevators in Two Good Towns, doing an annual business of one and one-half million dollars. A real business opportunity for anyone looking for a live, going, profitable business. Investigation will bring complete details. Address 99Z6, Grain & Feed Journals, Chicago 4, Ill.

FOR SALE—Elevator. Central Illinois on Wabash RR. Capacity 20,000 bu. \$15,000. Truck scale air lift. Good territory. Address 99W19, Grain & Feed Journals, Chicago 4, Illinois.

ELEVATORS WANTED

WANTED—To Buy or Lease Grain Elevator in Illinois or Indiana. Must be in good grain section and reasonably priced. Address 99Z3, Grain & Feed Journals, Chicago 4, Ill.

BUSINESS OPPORTUNITY

FOR SALE—Old established Feed Manufacturing concern, located in the western New York feed region. Business showing a nice profit each year. Storage bins, mixing and grinding equipment, car loading facilities. A good profit-maker at the right price. Write H. Newman, 2518 Outlook, Kalamazoo, Mich.

If What You Want you see advertised, tell the advertiser. If Not—Tell the Journal.

HELP WANTED

WANTED—Experienced Feed Salesman for state of Illinois, selling a vitamin pre-mix which has been sold to feed mills for 25 years. (Commission and drawing account.) Excellent opportunity for the salesman that can qualify. Sales Manager, 521 S. 3rd St., Minneapolis 15, Minnesota.

WANTED—EXPERIENCED FEED SALESMAN TO HANDLE HAY ON COMMISSION BASIS. TERRITORY NEW ENGLAND STATES. Write Laurentide Hay & Grain Reg'd., St-Lin des Laurentides, Que., Canada.

WANTED—A Mill and Elevator Superintendent capable of operating pellet and mixing machinery and handling men. Preferably a man of less than 40 years of age. John R. Jirdon, Industries, Inc., Morrill, Nebr.

SCALES WANTED

SCALES WANTED

3—300 bushel Howe Hopper Scales.
Also Platform Scales and Weightographs.

COLUMBIA SCALE COMPANY
2439 N. Pulaski Road Chicago 39, Illinois.

WANTED—One good 9 x 12 Howe or Fairbanks Truck Scale and one set of good 10 bu. Automatic Grain Loading Scales. Abilene Flour Mills Co., Abilene, Kans.

SCALES FOR SALE

FOR SALE—Wagon, stock and truck scales, new and rebuilds. In stock. Immediate delivery. Acme Scale Co., 335 Southwest Blvd., Kansas City, Mo. Scales for Every Purpose.

**If What You Want you see
advertised, tell the advertiser.
If Not—Tell the Journal.**

MACHINES WANTED

WANTED TO BUY—Richardson Scales, Bag Closing Machines and other good MILL, FEED & ELEVATOR EQUIPMENT.

J. E. Hagan Mill Machinery
1522 East High Street Jefferson City, Mo.

WILL BUY—Complete Elevator Leg with an 8 inch belt, including boot head and everything complete, or will buy any part. D. T. Foley, Corbin Elevator Co., Corbin, Kansas.

WANTED—100-lb. Bran Packer. State price and condition, etc. Palacek Mills, 122 East Market, Enid, Okla.

WANTED—Attrition Mill equipped with 20 or 25 HP. Motors. Must be in good condition. Schreiber Mills, St. Joseph, Mo.

MACHINES FOR SALE

FOR SALE

2—Steel Tanks 50' diameter x 33', 45 deg. bottom, 8 legs, dome roofs, each equipped with Redler conveyors and elevators to handle material from railroad track hoppers to storage tanks at 35 t.ph.

21—Horizontal Dry Mixers, from 50 to 5000 lb. capacity.

18—Hammer Mills: Williams, Gruendler, Sturtevant, Jeffrey, Prater. All sizes and types.

7—Tyler Hummer Vibrating Screens, 1, 2 and 3: surface, 3' x 5' and 4' x 5'.

4—Anderson No. 1 Expellers, complete, m.d.

1—Louisville 6' x 50' Rotary Steam Tube Dryer.

1—Devine 5' x 33' Rotary Vacuum Dryer.

1—Sprout Waldron 36" Heavy Duty Ball Bearing Attrition Mill with 2—100 HP AC motors.

2—Nordyke and Marmon four 9 x 24" Roller Mills with serrated rolls.

100—Stainless Steel, Nickel, Copper and Aluminum Jacketed Kettles up to 1200 gallon capacity.

71—Steel Vertical and Horizontal Tanks up to 100,000 gal. capacity.

Send for Special Bulletin GB, listing complete details.

CONSOLIDATED PRODUCTS CO., INC.
13-15 Park Row, New York 7, N. Y.

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A Trial Order

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327 So. La Salle St., Chicago, Ill.

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PRICE CURRENT-GRAIN REPORTER

Gentlemen:—I wish to try the semi-monthly *Grain & Feed Journals Consolidated* to learn if I can get any helpful suggestions from the opinions, practices and experiences of other grain and feed dealers. Enclosed please find Two Dollars and Fifty Cents (\$2.50) for one year.

Name of Firm.....

Capacity of Elevator

Post Office.....

..... bus.

State.....

Use Universal Grain Code and reduce your Tolls

MACHINES FOR SALE

FOR SALE

7½ HP. New F-M totally enclosed fan cooled Motors. 3/60/220-440-1800 RPM. No base.
15 HP. New F-M TEFC Motors. 3/60/220-440-1800 RPM. No base.
¾ HP. single phase, 60 c. 110-220-1800 RPM. Motors. New.
¾ Same as above. New.
1 HP., 2 HP. and 3 HP. Same as above.
25B Thomas Bag Trucks. (5 bag size) New.
30 Thomas Bag Trucks. (5 bag size) New.
21 Thomas Daisy Trucks. (1 bag size) New.
1 bu. Richardson Wheat Scale for flour mill use or seed house. Automatic. Slightly used.
Breuer Portable Electric Blowers for getting the dust out of motors and hard to get places.
Dust Masks—Dupor's #4-24-46s. Safe protection from all dusts.
J. C. KINTZ COMPANY
Cedar Rapids, Iowa

FOR SALE

1—Robinson Vertical Floor Type Mixer, 3000 lbs. capacity, equipped with 7½ HP Louis Allis Ball Bearing motor with V-belt drive. This equipment is new and in crate ready for shipment.
1—40 HP Fairbanks Morse Type H Ball Bearing Electric Motor, 3 phase, 60 cycle, 220 volt. Speed 1800 RPM, complete with oil type compensator.
1—No. 1 Miracle Ace Molasses Mixer with graduating feeder and meters. Electric Motor can be furnished.
Pedelty Blower Company, Mason City, Iowa

MACHINERY & MOTORS—½ to 150 H.P. electric motors in stock, open and dust proof, also gear-heads. Air Blast Car Loaders, Power Shovels, Truck Hoists, Batch Mixers, Corn Cutters and Graders, Cleaners, Pellet Crumblers, Shellers, Hammer Mills, Attrition Mills, Molasses, etc.
You Can Get WHAT You Want WHEN You Want It From Davis.

Established 1894

H. C. Davis' Sons Mill Machinery Co.
Bonner Springs, Kansas

FOR SALE—CAR LOADERS, Air Blast. One Ton Vertical Batch Mixers; One Emerson Cylinder Wheat Separator; Boss Car Loader; Corn Cutter; Two-Twenty Inch Eureka Aspirators; One—24" Beall Aspirator; One—10"x30" Nordyke & Marmon Dbl. Roller Mill; Nine 15"x30" Crimping or Flaking Rolls, only; One —2000 bu. Howe Elevator Hopper Scale; One Roscoe Ajax Oat Huller.

J. E. Hagan Mill Machinery
1522 East High Street Jefferson City, Mo.

FOR SALE

Conveyors, including floor to floor conveyors\$684.00
Bag and Box Pilers..... 708.00
20-ton Truck Scales..... 702.00
Motors, conveyor belting, casters, bearings.

BONDED SCALE COMPANY

120 Bellview Columbus 7, Ohio
Phones: Garfield 1651; Univ. 2332 Evenings

FOR SALE—New and Used Fords and Jay Bee Hammer Mills, Brower Mixers, Western Shellers and Cleaners, Electric Motors, Starters, Ammeters, Permanent Magnets, etc. All used equipment reconditioned and guaranteed. At reasonable prices. Immediate delivery. Many hard-to-get items.

Siegrist

P. O. Box 227—Phone 630
Noblesville, Indiana

FOR SALE—USED MACHINERY

1—26" Monarch belt driven Attrition Mill Line shaft and pulleys for belt driven mill.
1—70 H.P. Primm heavy duty oil engine.
1—Globe combination truck and wagon dump.
1—Monarch Ear Corn Crusher.

H. W. Colwill Creston, Illinois.

FOR SALE—One portable Boss Car Loader you can use on another railroad when cars are scarce. It is in good condition, with gasoline motor. Also Kelly Duplex Model L. Hammer-mill. Gillespie Co-op. Farmers Elevator Co., Gillespie, Illinois.

MACHINES FOR SALE

FOR SALE—Immediate delivery.

1—New No. 192 Bauer Bros. High Speed 21 in. Hammer Mill, complete.
1—New 75 HP. Allis-Chalmers, 3600 RPM. Induction Type Motor.
1—New 75 HP. Compensator.
Flack-Pennell Co., Inc., James & Franklin Sts., Saginaw, Mich.

FOR SALE—Used Hammer Mill—Good Condition. No. 30 Standard Prater "Blue Streak" with up-pipe, collector, bagger, screens, magnetic separator and 1A Prater 2 roll Crusher Feeder, with shear pin sheave—less motors and drive.

Gregory Farmers Elevator,
Gregory, Michigan.

FOR SALE—One Union Iron Western Pitless Sheller. Right hand over No. 25. In fair condition. Roller Bearings. Price \$75.00.

One 10 HP. type A.R.X. 3 phase 60 cycle 1750 RPM. Motor 220 volts. Motor in good condition. Starter needs magnet. Price \$100.00. Bainbridge Grain & Feed Co., Bainbridge, Indiana.

FOR SALE—3 Hi 9x30 Great Western; 3 Hi 9x18 Noyes; 9x24" Full size rolls. New and Used Motors—New and Used Mill Machinery—Hammer Mills—Corrugating Machines and Tools.

Ross Machine & Mill Supply Inc.
10 W. 16th St. Oklahoma City, Okla.

FOR SALE—1 No. 30 Blue Streak Hammer Mill.

1—Nickle Crusher-Feeder.
1—Bartlett Snow Corn Sheller.
1—One ton Kelly Duplex Feed Mixer.
Westville Hammer Mills, Box 95, Westville, Ind.

FOR SALE—#25 Western roller bearing Corn Sheller 250 to 350 bu. capacity including V-belt drive complete and 15 HP. 60 cycle 3 phase 220/440 volt motor and base. New, never used. \$535.00. Address 99X13, Grain & Feed Journals, Chicago 4, Ill.

MACHINES FOR SALE

FOR SALE—One used No. 5 Western Corn Sheller with new complete roller and cradle assembly installed in 1944, not used since 1945. Price \$145.00, FOB Fargo. W. H. Magill Seed Co., P. O. Box 2019, Fargo, North Dakota.

FOR SALE—1 Superior Model G-54 Bean Cleaner.

1 No. 998 Ferrell Bean Cleaner.
1 Monitor No. 6 Grain Cleaner.
Bad Axe Grain Co., Bad Axe, Michigan.

FOR SALE—Hammer mills—used and rebuilt Prater Blue Streak Standard Mills—rebuilt Attrition Mills—New Motors and Starters. McLaughlin, Ward & Co., Wardcraft Division, Jackson, Michigan.

FOR SALE—24" Sprout-Waldron mill; two 20 HP. motors, 40 HP. starter. One Dings Magnetic separator, one Prater corn crusher. Elevator cups and belts. Johnson Creek Coop. Exchange, Johnson Creek, Wisconsin.

FOR SALE—One Model C-60 Atlas track Coal Unloader. Mounted on rubber, complete with 60 ft. rubber cord and plugs. Used one season. Price \$485.00. The Deshler Farmers Elevator Co., Deshler, Ohio.

FOR SALE—One Blue Streak Mill No. 30, Model S with permanent magnet, dust collector and pipe, with 40 HP. motor and starter. New Richmond Lumber & Coal Co., New Richmond, Indiana.

FOR SALE—One 22" Robinson Unique Attrition mill complete with two 15-HP motors, starter and magnetic separator. Ready to run. A-1 condition. Inquire. Arndt Bros. Co., Inc., Sheboygan, Wis.

When you are in the market for new or used mill machinery—Electric Motors, or any other equipment, write J. E. Hagan Mill Machinery, 1522 E. High St., Jefferson City, Mo.

The rate for advertisements in this department is 40 cents per type line each insertion.

Book Headquarters

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CONSOLIDATED

327 So. La Salle St.

Chicago 4, Ill.

MACHINES FOR SALE

FOR SALE—100 HP. K. R. Wilson Industrial Power Unit complete. (Ford Mercury). Hockman Grain & Feed Co. (Madison Mills), Mount Sterling P. O., Ohio.

FOR SALE—Cummins H6 diesel engine complete with Twin Disc clutch and V-Pulley power take off. Price \$1,500.00. Stafford Grain Company, Hope, Indiana.

FOR SALE—Kelly Duplex Hammer Mill. Model X with 30 HP. Motor and Belts. First class condition. Burk Elevator Co., Decatur, Indiana.

FEED MIXER for sale, has motor, and a late machine. Need space. Will sacrifice. Write 95E6, Grain & Feed Journals, Chicago 4, Ill.

FOR SALE—Overhead portable electric Truck Hoist, complete with G. E. Motor. Delaney Grain and Lumber Co., Wapella, Illinois.

FOR SALE—Complete equipment for feed mill, including 12 ton scales. John Ratcliff, Pymont Feed Store, Delphi, Indiana.

MACHINES FOR SALE

FOR SALE—Tag Heppenstall Moisture Tester used only a few months, \$200.00, shipment from Akron, Iowa. H. W. Ross, 610 South Fleishel Avenue, Tyler, Texas.

FOR SALE—Used Hammer Mills. One Blue Streak No. 30, \$200.00; one Papec MS—\$100.00. Stafford Grain Co., Hope, Indiana.

HAMMER MILL with 25-HP motor and all attachments. Priced to sell. Write 95E5, Grain & Feed Journals, Chicago 4, Ill.

FEED MIXER—One-ton floor level feed; has motor good as new. Write 95E4, Grain & Feed Journals, Chicago 4, Ill.

CORN CUTTER & Grader—has motor—used very little. 95E3, Grain & Feed Jnl's., Chicago.

MOTORS WANTED

WANTED—One new or exceptionally good used motor, 10 H.P. 110/220 volts, 40-60 amp., single phase 1750-1800 rpm.; preferably a dust-proof but open type acceptable. Write or call us Collect. Bixby Non-Stock Co-op. Co., Sutton, Nebraska, Phone 1314.

MOTORS--GENERATORS

ELECTRICAL MACHINERY

Large stock of motors and generators, A.C. and D.C., new and rebuilt, at attractive prices. Special bargains in hammermill motors 25 to 100 hp., 1,200 to 3,600 rpm. Send us your inquiries. Expert repair service.

V. M. NUSSBAUM & CO., Ft. Wayne, Ind.

In Stock

New TEFC, 3 phase Fairbanks Morse Motors. 125-HP, 1200 RPM; 75-HP, 1800 RPM; 10-HP, 1200 RPM; 7½-HP, 1800 RPM; 5-HP, 1200 RPM.

Capital Electric Co.,

209 E. 9th Street

Topeka, Kansas

FOR SALE—5 HP TEFC Motors—6—800 amps. 220 volt entrance switches 400 amps. and 600 amps. entrance switches. Distribution panels both 220 volt and 440 volt, available from stock. D. E. Hughes Company, Hopkins, Mich.

AVAILABLE from stock at this time 5 hp, TEFC motors, also 7½, 10, and 15 hp. motors TEFC, 3/60/220/440/1800/. D. E. Hughes Co., Hopkins, Michigan.

MOTOR—Good U. S. Ball Bearing 15 HP 3 phase, 220 Volt, 60 cycles, 1200 R.P.M., also starter equipment. J. D. Infield Grain Co., Springfield, Colorado.

FOR SALE—Tagg Hepp Moisture Meters in good condition, complete with both rolls. \$215.00 each f.o.b. Circleville, Ohio. R. P. Reid, Circleville, Ohio.

FOR SALE—One 20 HP. 3 phase, 60 cycle, 220 volt, 1200 RPM., type B, Fairbanks-Morse Motor. Armacost Elevator, Campbelltown, Ohio.

SEEDS FOR SALE

FOR SALE—6,000 bushels Clinton Seed Oats, purity 98.90, germination 97%, test weight 41 lbs. All or any amount at \$2.00 per bushel bulk, \$2.25 bagged, f.o.b. shipping point here. Allen Joslin Seed Farms, Holstein, Iowa.

FOR SALE—Certified Clinton Seed Oats, truck or car load. Turner Seed & Supply Co., Villa Grove, Ill.

FOR SALE—Certified Clinton Seed Oats. Briscoe Grain & Seed Co., Chalmers, Ind.

FOR SALE—Clinton Seed Oats, sacked and recleaned. A. F. Meis, LeMars, Iowa.

SEED STORE FIXTURES

FOR SALE—Seed Store Fixtures, Bins, Cabinets. Walkerbilt, Penn Yan, N. Y.

OFFICE EQUIPMENT

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How many costly errors do YOU make every day, when trying to reduce pounds to bushels, you are interrupted by a telephone call or a casual caller asks for a bid on his grain?

The last word in Clark's Direct Reduction Grain Tables is a combination of our popular 7-card set, Form 3275 Spiral and our new Truck Loads to Bushels, Form 23,090 Spiral which reduce by 10 pound breaks any weight of grain from 600 to 23,090 pounds to bushels of 32, 48, 56, 60, 70 and 75 lbs.

Carefully printed from large clear type, with jet black ink, showing the bushels directly beside the weight of grain reduced and distinctly separated by rules and spaces so as to prevent errors in reading. The most practical, the most helpful grain reduction tables ever published. Their use will return their cost every day of the busy season in labor and time saved and errors prevented.

The spiral binding keeps the cards flat, in regular sequence, and prevents the exposure of more than one weight unit at a time so it is easy to keep wide open on the table for the grain being received. Both sets of tables are printed on heavy six ply tough check of durable quality, 11x13 inches with marginal index.

Direct Reduction Grain Tables

REPORT BY GRAIN DEALERS ASSOCIATION

32 lbs. per bushel—OATS

Weight (Lbs.)	Bushels	Weight (Lbs.)	Bushels	Weight (Lbs.)	Bushels	Weight (Lbs.)	Bushels	Weight (Lbs.)	Bushels
12,100	378.125	12,110	378.438	12,120	378.750	12,130	379.062	12,140	379.375
12,150	379.688	12,160	380.000	12,170	380.312	12,180	380.625	12,190	380.938
12,200	381.250	12,210	381.562	12,220	381.875	12,230	382.188	12,240	382.500
12,250	382.812	12,260	383.125	12,270	383.438	12,280	383.750	12,290	384.062
12,300	384.375	12,310	384.688	12,320	385.000	12,330	385.312	12,340	385.625
12,350	385.938	12,360	386.250	12,370	386.562	12,380	386.875	12,390	387.188
12,400	387.500	12,410	387.812	12,420	388.125	12,430	388.438	12,440	388.750
12,450	389.062	12,460	389.375	12,470	389.688	12,480	390.000	12,490	390.312
12,500	390.625	12,510	390.938	12,520	391.250	12,530	391.562	12,540	391.875
12,550	392.188	12,560	392.500	12,570	392.812	12,580	393.125	12,590	393.438
12,600	393.750	12,610	394.062	12,620	394.375	12,630	394.688	12,640	395.000
12,650	395.312	12,660	395.625	12,670	395.938	12,680	396.250	12,690	396.562
12,700	396.875	12,710	397.188	12,720	397.500	12,730	397.812	12,740	398.125
12,750	398.438	12,760	398.750	12,770	399.062	12,780	399.375	12,790	399.688
12,800	400.000	12,810	400.312	12,820	400.625	12,830	400.938	12,840	401.250
12,850	401.562	12,860	401.875	12,870	402.188	12,880	402.500	12,890	402.812
12,900	403.125	12,910	403.438	12,920	403.750	12,930	404.062	12,940	404.375
12,950	404.688	12,960	405.000	12,970	405.312	12,980	405.625	12,990	405.938
13,000	406.250	13,010	406.562	13,020	406.875	13,030	407.188	13,040	407.500
13,050	407.812	13,060	408.125	13,070	408.438	13,080	408.750	13,090	409.062
13,100	409.375	13,110	409.688	13,120	410.000	13,130	410.312	13,140	410.625
13,150	410.938	13,160	411.250	13,170	411.562	13,180	411.875	13,190	412.188
13,200	412.500	13,210	412.812	13,220	413.125	13,230	413.438	13,240	413.750
13,250	414.062	13,260	414.375	13,270	414.688	13,280	415.000	13,290	415.312
13,300	415.625	13,310	415.938	13,320	416.250	13,330	416.562	13,340	416.875
13,350	417.188	13,360	417.500	13,370	417.812	13,380	418.125	13,390	418.438
13,400	418.750	13,410	419.062	13,420	419.375	13,430	419.688	13,440	420.000
13,450	420.312	13,460	420.625	13,470	420.938	13,480	421.250	13,490	421.562
13,500	421.875	13,510	422.188	13,520	422.500	13,530	422.812	13,540	423.125
13,550	423.438	13,560	423.750	13,570	424.062	13,580	424.375	13,590	424.688
13,600	425.000	13,610	425.312	13,620	425.625	13,630	425.938	13,640	426.250
13,650	426.562	13,660	426.875	13,670	427.188	13,680	427.500	13,690	427.812
13,700	428.125	13,710	428.438	13,720	428.750	13,730	429.062	13,740	429.375
13,750	429.688	13,760	430.000	13,770	430.312	13,780	430.625	13,790	430.938
13,800	431.250	13,810	431.562	13,820	431.875	13,830	432.188	13,840	432.500
13,850	432.812	13,860	433.125	13,870	433.438	13,880	433.750	13,890	434.062
13,900	434.375	13,910	434.688	13,920	435.000	13,930	435.312	13,940	435.625
13,950	435.938	13,960	436.250	13,970	436.562	13,980	436.875	13,990	437.188
14,000	437.500	14,010	437.812	14,020	438.125	14,030	438.438	14,040	438.750
14,050	439.062	14,060	439.375	14,070	439.688	14,080	440.000	14,090	440.312
14,100	440.625	14,110	440.938	14,120	441.250	14,130	441.562	14,140	441.875
14,150	442.188	14,160	442.500	14,170	442.812	14,180	443.125	14,190	443.438
14,200	443.750	14,210	444.062	14,220	444.375	14,230	444.688	14,240	445.000
14,250	445.312	14,260	445.625	14,270	445.938	14,280	446.250	14,290	446.562
14,300	446.875	14,310	447.188	14,320	447.500	14,330	447.812	14,340	448.125
14,350	448.438	14,360	448.750	14,370	449.062	14,380	449.375	14,390	449.688
14,400	450.000	14,410	450.312	14,420	450.625	14,430	450.938	14,440	451.250
14,450	451.562	14,460	451.875	14,470	452.188	14,480	452.500	14,490	452.812
14,500	453.125	14,510	453.438	14,520	453.750	14,530	454.062	14,540	454.375
14,550	454.688	14,560	455.000	14,570	455.312	14,580	455.625	14,590	455.938
14,600	456.250	14,610	456.562	14,620	456.875	14,630	457.188	14,640	457.500
14,650	457.812	14,660	458.125	14,670	458.438	14,680	458.750	14,690	459.062
14,700	459.375	14,710	459.688	14,720	460.000	14,730	460.312	14,740	460.625
14,750	460.938	14,760	461.250	14,770	461.562	14,780	461.875	14,790	462.188
14,800	462.500	14,810	462.812	14,820	463.125	14,830	463.438	14,840	463.750
14,850	464.062	14,860	464.375	14,870	464.688	14,880	465.000	14,890	465.312
14,900	465.625	14,910	465.938	14,920	466.250	14,930	466.562	14,940	466.875
14,950	467.188	14,960	467.500	14,970	467.812	14,980	468.125	14,990	468.438
15,000	468.750	15,010	469.062	15,020	469.375	15,030	469.688	15,040	470.000
15,050	470.312	15,060	470.625	15,070	470.938	15,080	471.250	15,090	471.562
15,100	471.875	15,110	472.188	15,120	472.500	15,130	472.812	15,140	473.125
15,150	473.438	15,160	473.750	15,170	474.062	15,180	474.375	15,190	474.688
15,200	475.000	15,210	475.312	15,220	475.625	15,230	475.938	15,240	476.250
15,250	476.562	15,260	476.875	15,270	477.188	15,280	477.500	15,290	477.812
15,300	478.125	15,310	478.438	15,320	478.750	15,330	479.062	15,340	479.375
15,350	479.688	15,360	480.000	15,370	480.312	15,380	480.625	15,390	480.938
15,400	481.250	15,410	481.562	15,420	481.875	15,430	482.188	15,440	482.500
15,450	482.812	15,460	483.125	15,470	483.438	15,480	483.750	15,490	484.062
15,500	484.375	15,510	484.688	15,520	485.000	15,530	485.312	15,540	485.625
15,550	485.938	15,560	486.250	15,570	486.562	15,580	486.875	15,590	487.188
15,600	487.500	15,610	487.812	15,620	488.125	15,630	488.438	15,640	488.750
15,650	489.062	15,660	489.375	15,670	489.688	15,680	490.000	15,690	490.312
15,700	490.625	15,710	490.938	15,720	491.250	15,730	491.562	15,740	491.875
15,750	492.188	15,760	492.500	15,770	492.812	15,780	493.125	15,790	493.438
15,800	493.750	15,810	494.062	15,820	494.375	15,830	494.688	15,840	495.000
15,850	495.312	15,860	495.625	15,870	495.938	15,880	496.250	15,890	496.562
15,900	496.875	15,910	497.188	15,920	497.500	15,930	497.812	15,940	498.125
15,950	498.438	15,960	498.750	15,970	499.062	15,980	499.375	15,990	499.688
16,000	500.000	16,010	500.312	16,020	500.625	16,030	500.938	16,040	501.250
16,050	501.562	16,060	501.875	16,070	502.188	16,080	502.500	16,090	502.812
16,100	503.125	16,110	503.438	16,120	503.750	16,130	504.062	16,140	504.375
16,150	504.688	16,160	505.000	16,170	505.312	16,180	505.625	16,190	505.938
16,200	506.250	16,210	506.562	16,220	506.875	16,230	507.188	16,240	507.500
16,250	507.812	16,260	508.125	16,270	508.438	16,280	508.750	16,290	509.062
16,300	509.375	16,310	509.688	16,320	510.000	16,330	510.312	16,340	510.625
16,350	510.938	16,360	511.250	16,370	511.562	16,380	511.875	16,390	512.188
16,400	512.500	16,410	512.812	16,420	513.125	16,430	513.438	16,440	513.750
16,450	514.062	16,460	514.375	16,470	514.688	16,480	515.000	16,490	515.312
16,500	515.625	16,510	515.938	16,520	516.250	16,530	516.562	16,540	516.875
16,550	517.188	16,560	517.500	16,570	517.812	16,580	518.125	16,590	518.438
16,600	518.750	16,610	519.062	16,620	519.375	16,630	519.688	16,640	520.000
16,650	520.312	16,660	520.625	16,670	520.938	16,680	521.250	16,690	521.562
16,700	521.875	16,710	522.188	16,720	522.500	16,730	522.812	16,740	523.125
16,750	523.438	16,760	523.750	16,770	524.062	16,780	524.375	16,790	524.688
16,800	525.000	16,810	525.312	16,820	525.625	16,830	525.938	16,840	526.250
16,850	526.562	16,860	526.875	16,870	527.188	16,880	527.500	16,890	527.812
16,900	528.125	16,910	528.438	16,920	528.750	16,930	529.062	16,940	529.375
16,950	529.688	16,960	530.000	16,970	530.312	16,980	530.625	16,990	530.938
17,000	531.250	17,010	531.562	17,020	531.875	17,030	532.188	17,040	532.500
17,050	532.812	17,060	533.125	17,070	533.438	17,080	533.750	17,090	534.062
17,100	534.375	17,110	534.688	17,120	535.000	17,130	535.312	17,140	535.625
17,150	535.938	17,160	536.250	17,170	536.562	17,180	536.875	17,190	537.188
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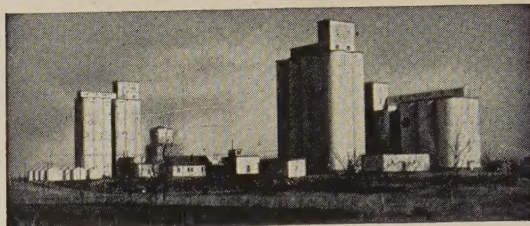
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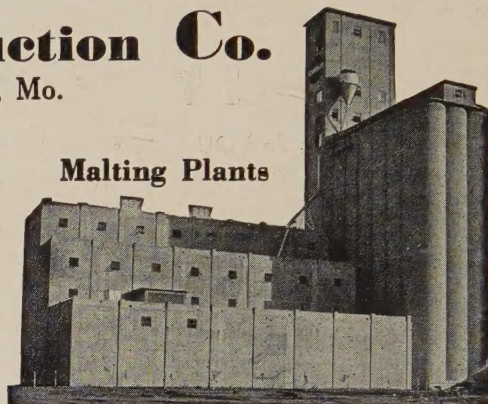
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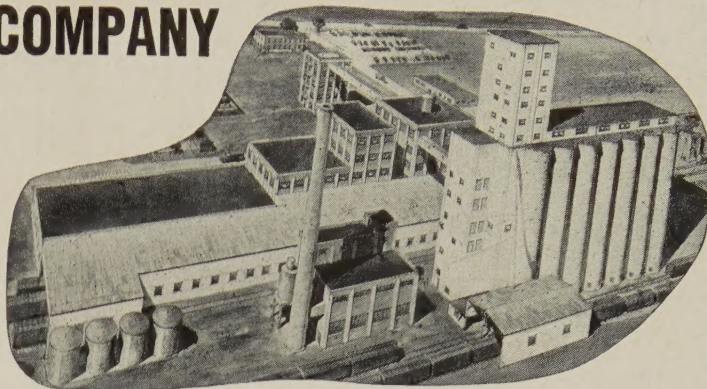
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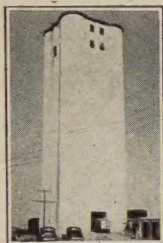
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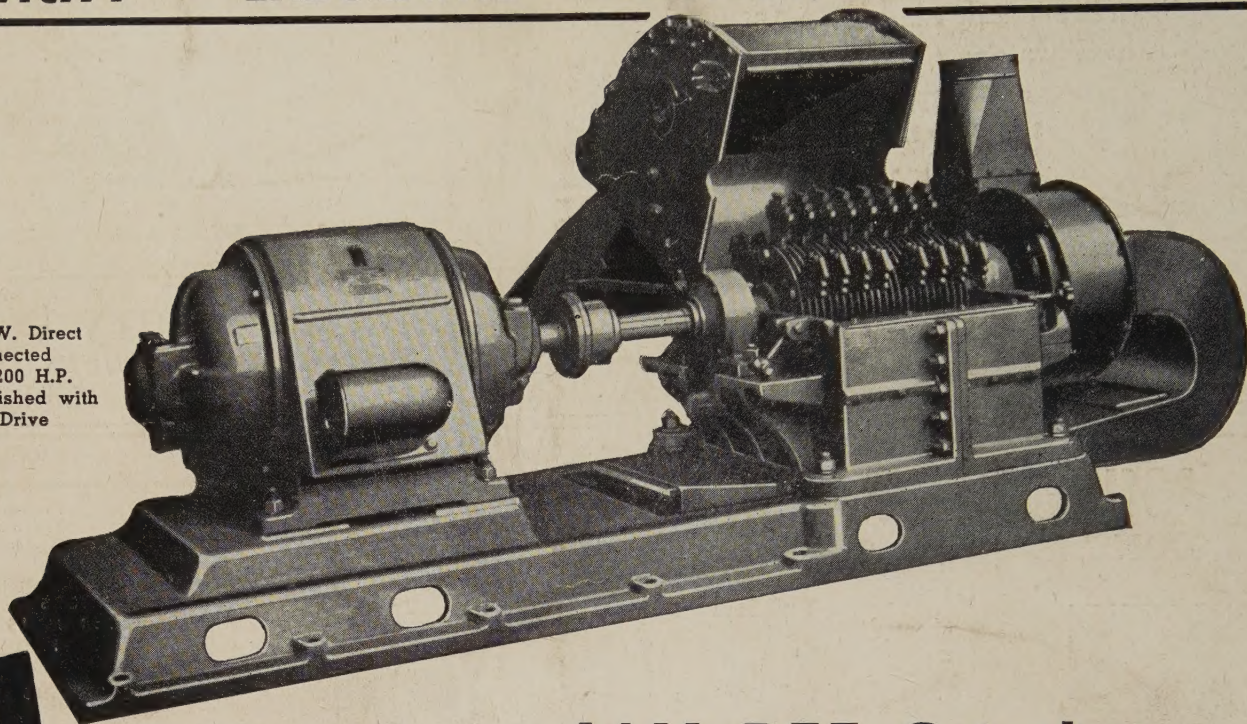
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